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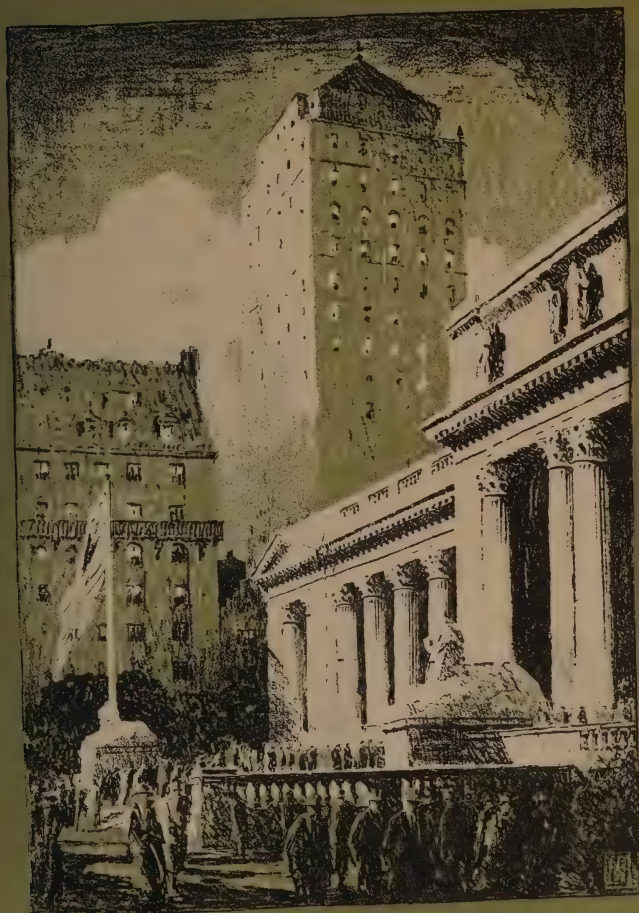
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The ARCHITECTURAL RECORD



JANVARY 1925



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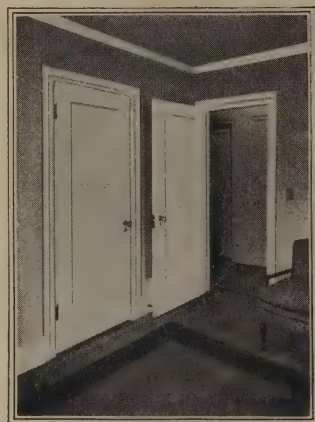
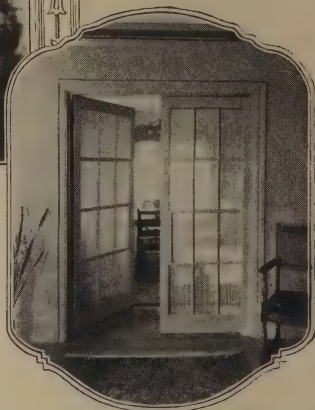
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ONE OF THREE MURAL PAINTINGS IN THE MAIN BALLROOM,
HOTEL ROOSEVELT, NEW YORK CITY.
Painted by Arthur Crisp.

The LIVERPOOL CATHEDRAL

Sir GILES GILBERT SCOTT, F.R.I.B.A., *Architect*

By

Harold Donaldson Eberlein

THE LIVERPOOL CATHEDRAL is of cardinal significance on several counts. For the architect in America, it affords an opportunity for illuminating comparisons with analogous undertakings in the United States—the Cathedral of St. John the Divine in New York, the Cathedral at Baltimore, and the Cathedral at Mount St. Alban, in Washington. Like these outstanding examples of ecclesiastical architecture in America, the Liverpool Cathedral is only partially completed. There is enough, however, to present a substantial earnest of what the finished structure will be. Like the American cathedrals, also, the Liverpool Cathedral is in a fair way of being pushed to completion in as short a time as physical circumstances will permit.

For England, the erection of this great building marks an epoch in the annals of national architecture and the ultimate realization of the enterprise is a matter of national interest.

For both British and American architects it supplies a striking instance of the perennial vitality of the Gothic mode and its capacity for flexible adaptation to modern requirements without either abandoning the fundamental spirit of Gothic inspiration or slavishly following the minutiae of historic precedent and tradition.

The site of the Cathedral is as satisfactory as could be obtained in a large city. St. James's Hill rises well above the river level so that the dominating mass of the buildings overtops everything in the vicinity; it is within a few minutes of the centre of the city, and there is sufficient open space around it for unobstructed views on all sides. An abandoned quarry, to the northeast, was years ago converted into a cemetery. The deep depression and the hillside occupied by this cemetery are within the Cathedral

precincts and not only give additional open space in that quarter, but also serve to accentuate the commanding height of the choir, tower and north transept.

The portion of the Cathedral so far completed consists of the Lady Chapel, the Choir, the Chapter House, and the northeastern and southeastern sections of the transepts with the part of the crossing between them, the future opening for the great central tower being filled by a temporary brick wall. The accompanying plan conveys a clear conception of the entire scheme and renders it possible to visualize the composition in all its relations.

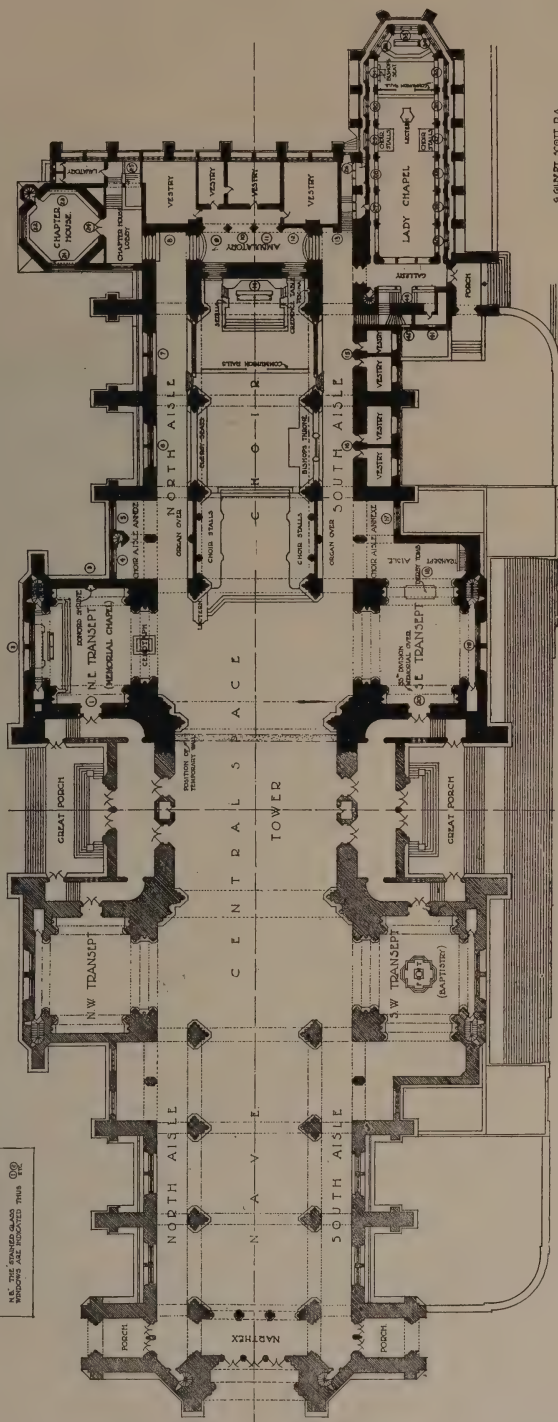
It will be seen that the architect has made a radical departure from traditional practice in the general arrangement. While adhering, in a broad way, to the time-honored cruciform shape of plan, he has in reality exaggerated the exterior breadth of the arms of the cross or transepts as integral projecting masses, inserting independent and deeply recessed porches between the two transept divisions of each side, and, at the same time, has minimized and almost wholly abrogated their interior function by making their customary area subservient to achieving a great central space at the crossing and beneath the tower, unimpeded by piers or divisions of any sort. For the fulfillment of this purpose, the lines of the nave piers, corresponding with the piers in the choir, are boldly interrupted so that the additional width of the aisles is thrown into the open area on both sides. By this device he has secured a much larger unencumbered area for congregations than would have been possible had he observed the strictly traditional methods of design without modification. He has, in effect, produced a space compar-



Stewart Bale, Liverpool

View Across City
LIVERPOOL CATHEDRAL, LIVERPOOL, ENGLAND
Sir Giles Gilbert Scott, Architect

SCALE OF FEET.



4 GILBERT SCOTT RD.
7 GRAYS INN SQUARE W.C.1.

Floor Plan Showing Completed Portion
LIVERPOOL CATHEDRAL, LIVERPOOL, ENGLAND
Sir Giles Gilbert Scott, Architect



Stewart Bale, Liverpool

View Across St. James' Cemetery
LIVERPOOL CATHEDRAL, LIVERPOOL, ENGLAND
Sir Giles Gilbert Scott, Architect

able in extent to the free area beneath a vast dome, although it is rectangular instead of circular in form.

Furthermore, in examining the interior, it will be seen that the choir and nave aisles have been completely subordinated to another feature on which special emphasis is laid, the breadth of unobscured space in the nave. As a matter of fact, the aisles being thus reduced to their lowest terms, their function is merely to serve as communicating corridors and no provision is made in them for worshippers. The choir aisles especially, along with the ambulatory, figure chiefly as means of access to the different vestries, the Chapter House, and the Lady Chapel. Inasmuch as great importance is attached to the central space for large congregations beneath the tower and crossings, it

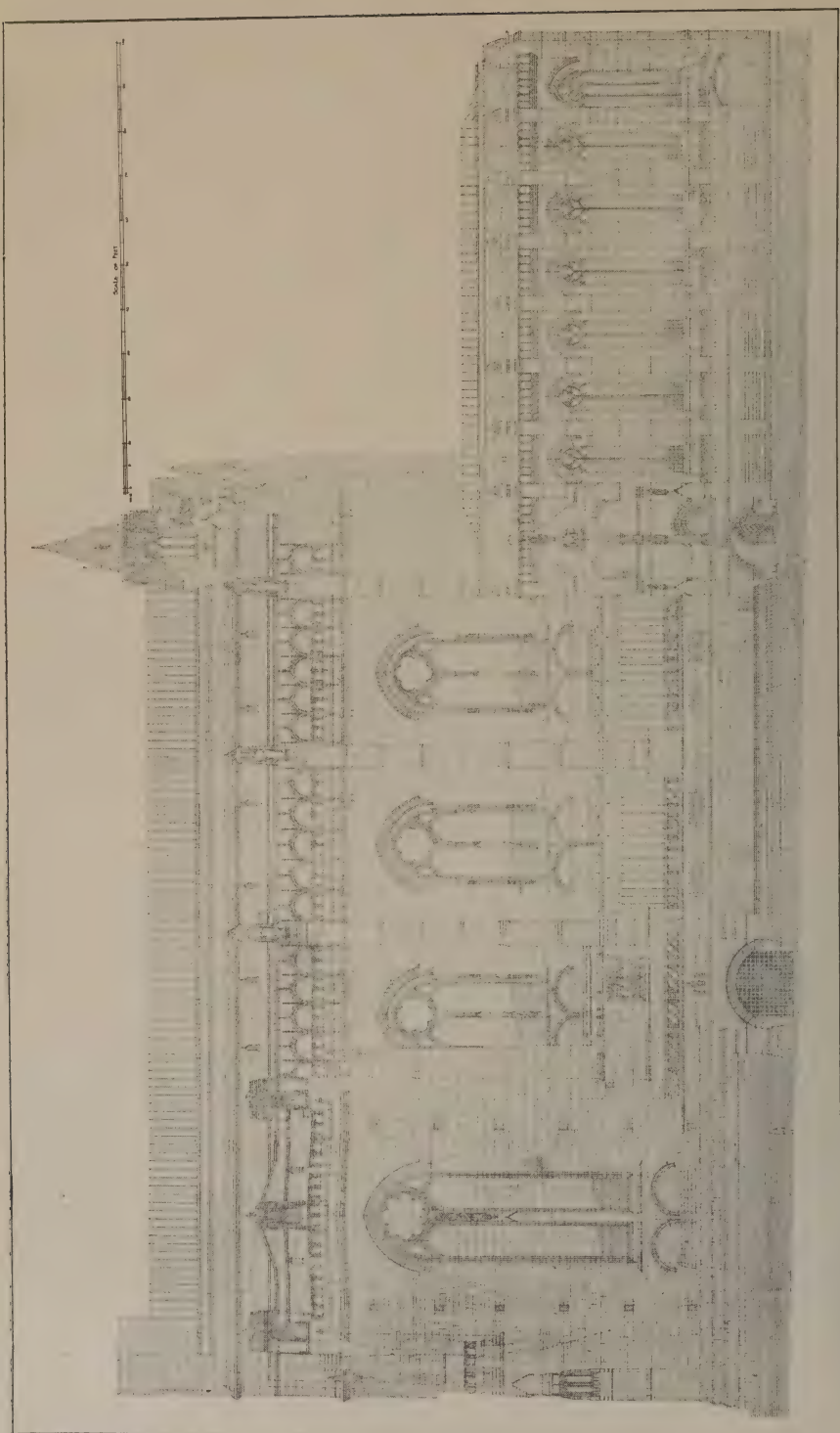
is quite appropriate that the main entrance should be by the transept doors rather than by the west door.

Another feature bound to arouse interested comparison with customary Gothic usage is the manner in which the walls of the aisles have been carried all the way to the parapet of the roof, thus altogether eliminating a clerestory. As a matter of actual fact, the transverse arches of the aisles are virtually nothing but low piercings through the great buttresses which, along with the choir and nave piers, sustain the vast weight and the thrust of the vaulting above choir and nave. Thus the piers of the choir and nave, together with the corresponding buttresses on each side, become to all intents and purposes so many enormous transverse walls of almost continuously solid masonry, buttresses outside the

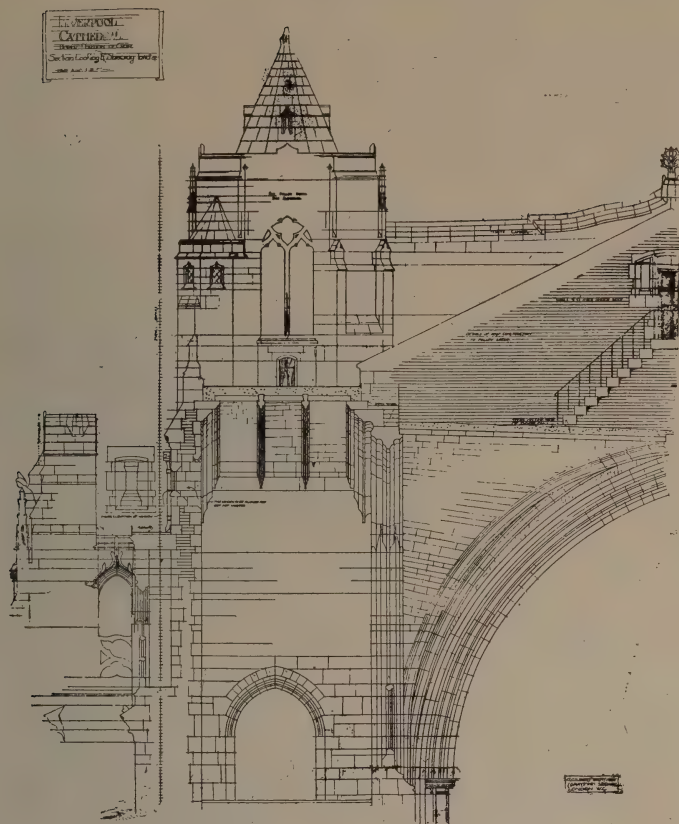


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Southeast Transept
LIVERPOOL CATHEDRAL, LIVERPOOL, ENGLAND
Sir Giles Gilbert Scott, Architect



Scale Drawing of Eastern Portion
LIVERPOOL CATHEDRAL, LIVERPOOL, ENGLAND
Sir Giles Gilbert Scott, Architect



Upper Portion of Choir Section Looking East

building and piers within, a remarkable case of the merged identity of two ordinarily distinct members.

This arrangement does away with flying buttresses outside; the flight is really made intra-mural, and tremendous reinforcement is gained. The principles of counter-thrust and support remain unchanged; only their mode of visible expression is different. Furthermore, this departure from traditional usage permits an arcade of extraordinary height between the aisles, on one hand, and the choir and nave on the other. Here the arches spring from capitals at a height of fifty-five and a half feet above the floor of the cathedral, while the transverse arches across choir and nave take their spring eighty-four and a half feet above the floor.

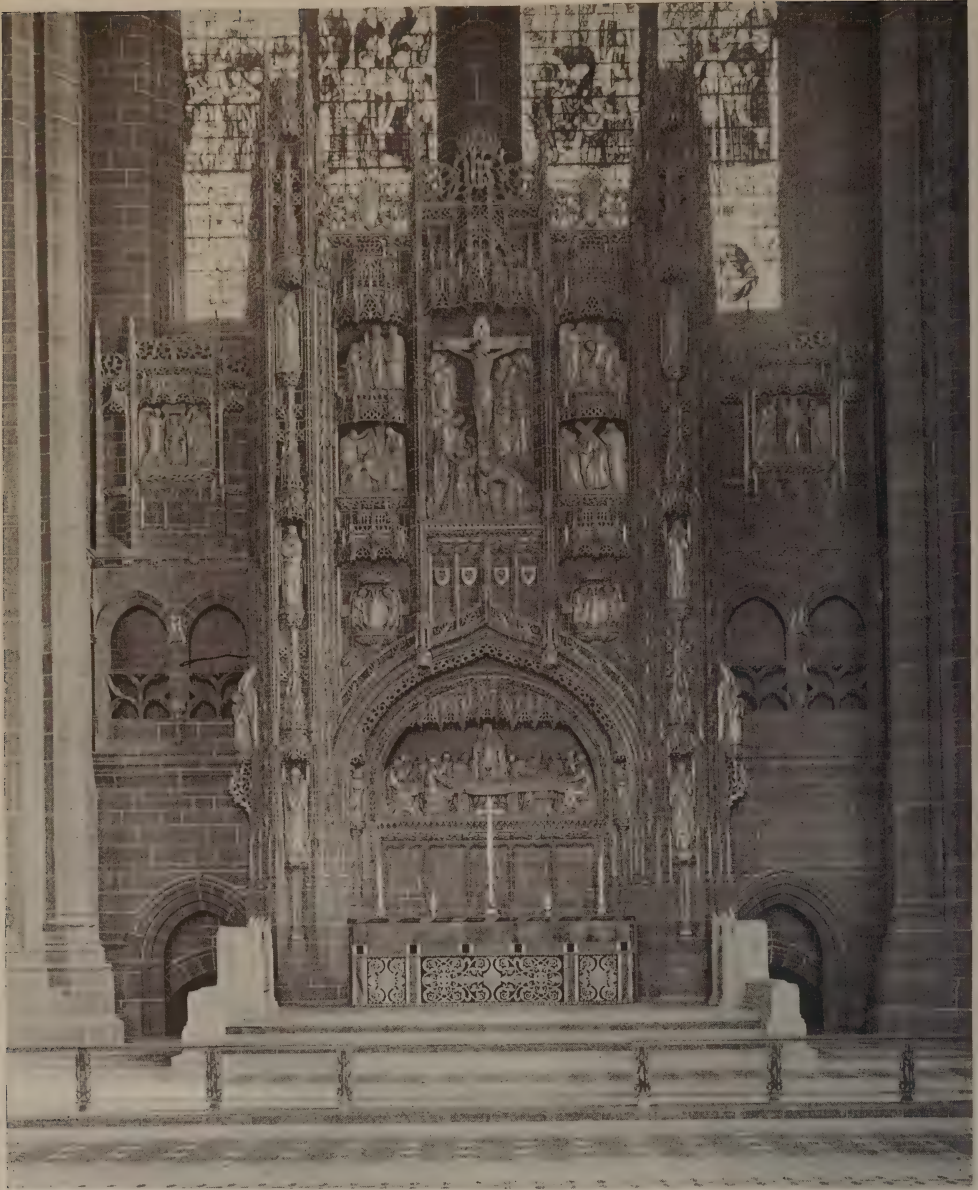
The buttresses on the exterior, while by no means lacking in sufficient bulk to

impart dignity and stability to the composition, display neither the proportions nor the contour usually associated with the construction of a lofty visible clerestory. Between the buttresses, the outer walls of the aisles, which really constitute curtain walls between vast piers, are pierced with tall windows that flood the choir and nave with light, the actual volume of light admitted being comparable to, if not in fact greater than, the amount entering through aisles and clerestory windows in their traditional arrangement.

These aisle windows rise to the height of the arches between the aisles and the choir, and in width externally they nearly fill the bays between the

buttresses. When the great central space is eventually completed its main lighting will be by means of clerestory windows whose sills will be approximately on a level with the top of the choir arcade.

Having disposed of the choir and nave aisles and clerestory at one sweep by an ingenious combination, there still remained the very considerable space between the crown of the arches in the aisle arcades and the crown of the choir vaulting to be accounted for. In this space the architect has introduced a triforium gallery of which the width is co-equal with that of the aisles beneath, while its expression in the uppermost portion of the choir walls consists of two arches within each choir bay, separated by shafts which are continued upward to form the secondary transverse supports of the choir vaulting. Each main bay of the choir vaulting is thus divided trans-



Stewart Bale, Liverpool

The Reredos

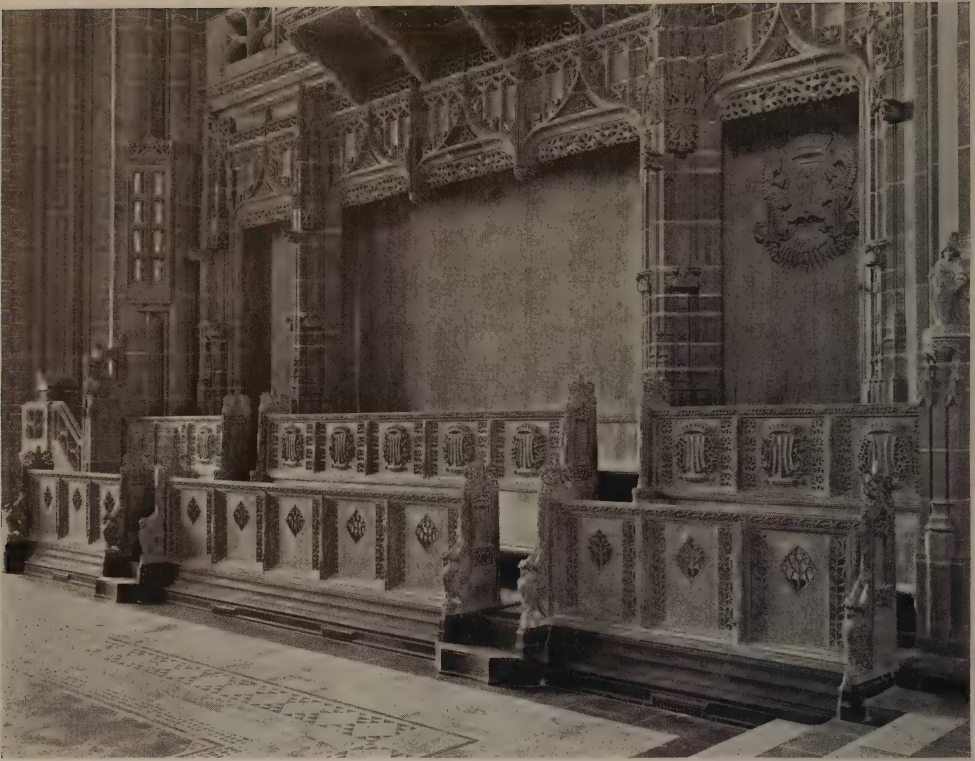
LIVERPOOL CATHEDRAL, LIVERPOOL, ENGLAND
Sir Giles Gilbert Scott, Architect



Stewart Bale, Liverpool

The Lady Chapel

LIVERPOOL CATHEDRAL, LIVERPOOL, ENGLAND
Sir Giles Gilbert Scott, Architect

*Stewart Bale, Liverpool*

The Choir Stalls

versely into two oblong compartments which are, in turn, subdivided by diagonal ribs with carved bosses at the points of intersection. Though the ridge of the vault appears from below to be a straight line, each bay in reality is slightly domical, the highest point being the apex of the subsidiary arches, which are pointed like the main arches. The diagonal ribs are nearly semi-circular in contour. Like the vaulting of the aisles, the vaulting of the triforium runs at right angles to the main axis of the building.

As noted before, the exterior walls of the aisles extend from the ground to the parapet of the roof without structural interruption, and there are no windows in the triforium as the outer walls at this point are unpierced. The roof, rising at the middle about twenty feet above the crown of the interior vaulting in the choir, is supported partly on transverse walls carried by the main arches of the inner vault and partly on walls

resting upon the arches of the triforium. Between the parapet and the supporting walls resting on the triforium arches, for the width of the triforium on each side, there is no roof other than the exteriors of the barrel vaults above the triforium. These are covered with asphalt and drain from the valleys through the parapets. Throughout the roof is of ferro-concrete construction in order to eliminate all possible risk of fire. In this connection, it is of interest to note that nowhere else in the fabric are there any concealed structural steel beams employed nor any concealed structural metal work, but that the vaulting derives its stability wholly from the design.

So much for a synopsis of the structural system. It is a sincere expression of design and structure wholly concurrent. It is adroit but altogether honest and free of all suspicion of subterfuge or of recourse to any specious tricks for the sake of ultimate effect.

The material used, both outside and in-



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North Side of Choir

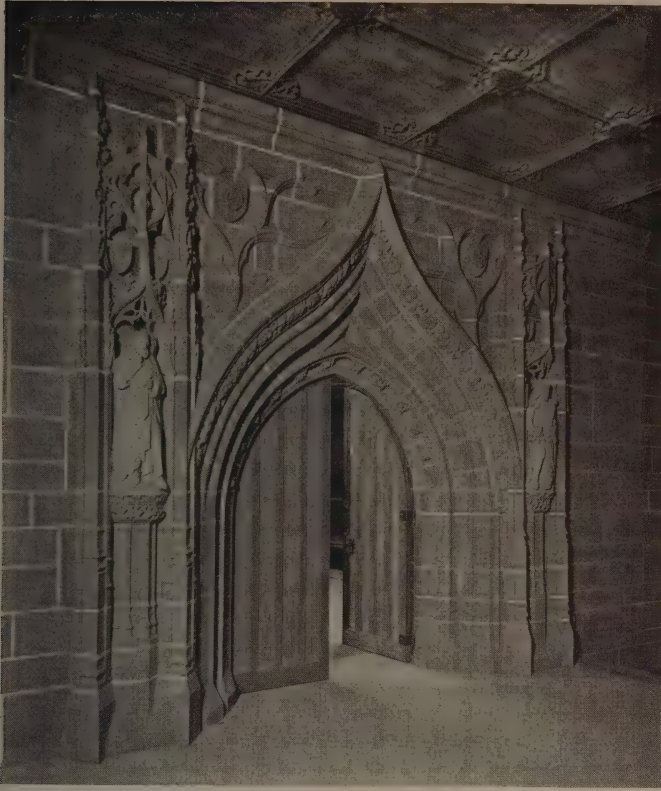
LIVERPOOL CATHEDRAL, LIVERPOOL, ENGLAND

Sir Giles Gilbert Scott, Architect



Stewart Bale, Liverpool

War Memorial Transept
LIVERPOOL CATHEDRAL, LIVERPOOL, ENGLAND
Sir Giles Gilbert Scott, Architect



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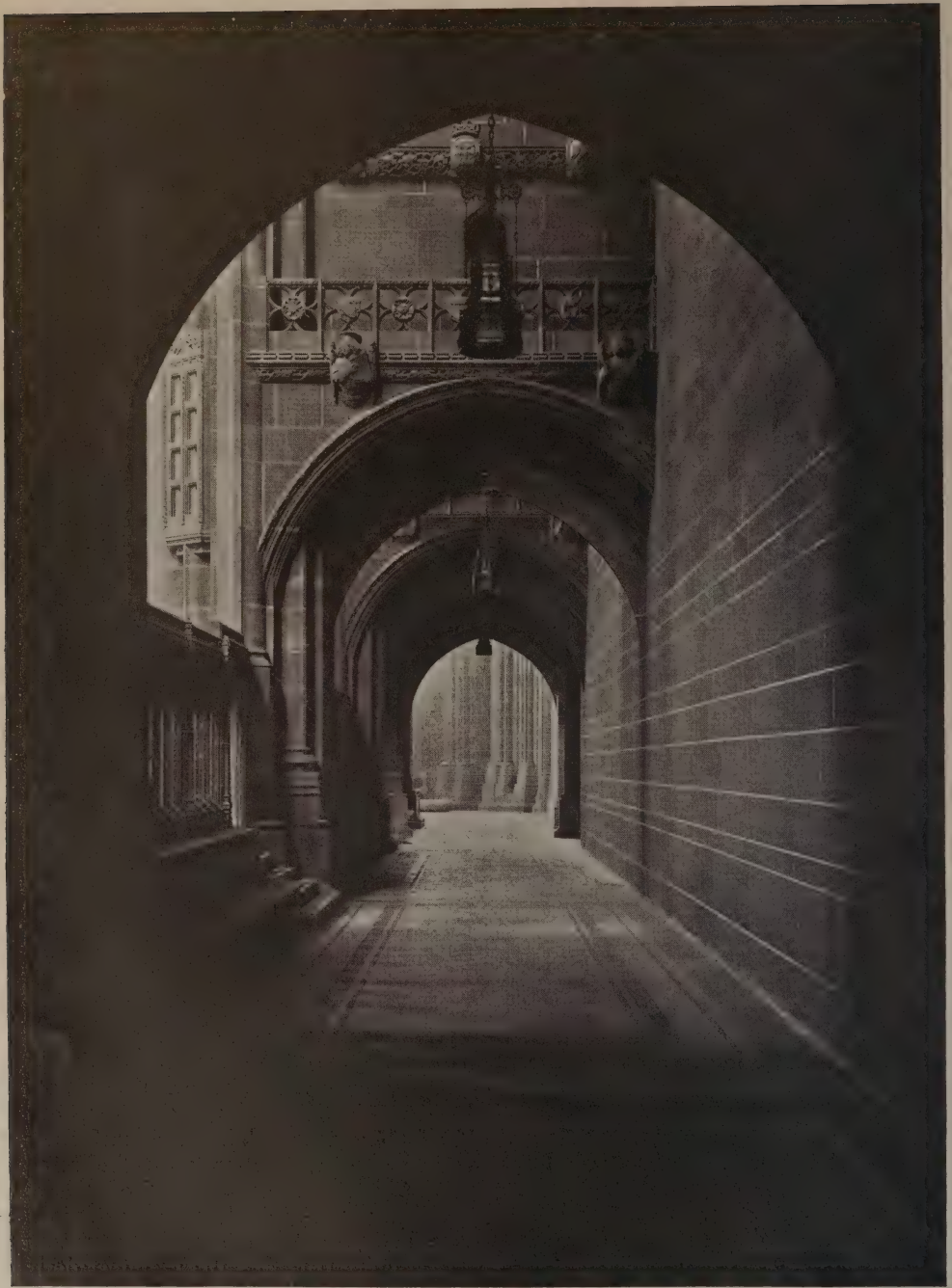
The Chapter House Doorway

side, is the local red sandstone of a warm, mellow hue, save for the floors, which are of marble. Except where the special emphasis of pattern was desired, as in the choir and in the War Memorial chapel in the north transept, the floor decoration has been confined to wide borders of geometric design in black marble dividing the area into rectangular panels, paved with grey Hopton Wood marble, corresponding in shape with the main divisions of the vaulting overhead. In the choir, the groundwork of the floor is black marble, while the grey is employed more sparingly, with an occasional dash of color imparted by yellow Sienna marble. At the central bay, within a lozenge, the arms of the diocese are wrought in marbles of divers colors. Grey Hopton Wood marble occurs again in the reredos above the altar in the War Memorial chapel. The choir stalls and the bishop's

throne are of richly carved oak; the light pendants are of bronze.

In the design of the details, the architect has shown a broad and accurate knowledge of Gothic precedent. More than that, however, he has shown facility, independence and discretion in adapting precedent to his purposes. It is obvious that he was saturated with the whole vocabulary of Gothic detail until it was a part of his very being; it is also obvious that, because of this saturation, he was able to design with freedom in the spirit of Gothic embellishment rather than in slavish bondage to the letter of authentically labeled prototypes. The entire gamut of Gothic detail was a storehouse of inspiration from which to draw and choose and combine, with assured liberty and understanding.

Acting upon the maxim that "decoration is the ritual of architecture," that it "should emphasize and not obscure the principles it seeks to glorify," in his distribution of enrichments Sir Giles Scott has maintained becoming and logical reticence, bringing the interior scheme to culmination in the reredos of the high altar where the effect of the sculpture and rich foliage is further enhanced by partial gilding. The one unfortunate feature in connection with the reredos and the carved enrichment of the east wall is the apparently undue prominence given the mortar joints of the masonry. It is quite true that the architect desired to stress the character of the reredos as an integral part of the structure, but its fashion and form would have carried this conviction without the accentuation of the joints which, as they now stand, impair the continuity of the composition



Stewart Bale, Liverpool

North Choir Aisle
LIVERPOOL CATHEDRAL, LIVERPOOL, ENGLAND
Sir Giles Gilbert Scott, Architect



Stewart Bale, Liverpool

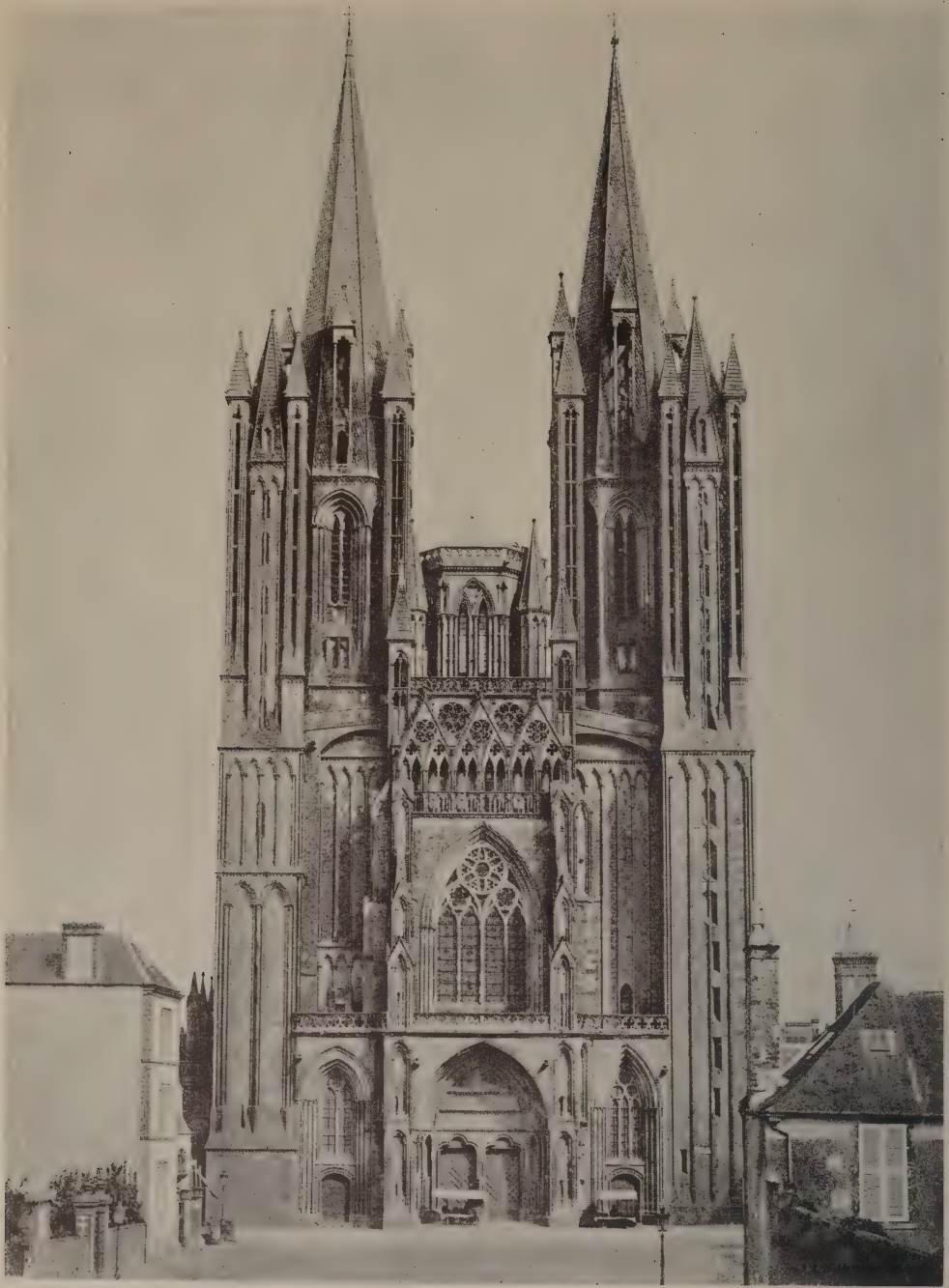
Door from Chapter House to Turret Staircase

and present a disturbing element to the eye. Aside from this defect, which is easily remediable, the work can excite only commendation. Externally, the ornament is reserved for the emphasis of structural features.

In designing such a building as Liverpool Cathedral, two courses were open, either to make it a vast achievement of archaeological erudition, or else to accept the spirit of tradition and interpret that spirit in a purely modern way. The latter course was the one chosen. For that reason it would be well-nigh impossible to make a criticism respecting style, other than to allude to the definition of style as the direct achievement of the end proposed, without permitting the distraction

of irrelevancies. On this score no critic can deny the success of the conception, whatever preferences for one type of expression or another may be individually entertained.

Whatever may be one's preference in ecclesiastical architecture, all must agree respecting Liverpool Cathedral that Sir Giles Scott has not only met and fully satisfied all the material requirements of the complex problem, but that he has also created a truly great work both instinct with individual impress and eloquent of the fact that the Gothic mode is not fossilized and incapable of organic growth but is still susceptible of flexible rational expression, full of vigorous vitality.



The Architectural Record

January, 1925

West Front
CATHEDRAL OF NOTRE DAME, COUTANCES, FRANCE
[16]

CONCERNING CHURCH ARCHITECTURE



By E Donald Robb

PART II

GOING BACK over the work of our leading church architects during the past twenty-five years, we notice an increasing appreciation of scale, especially in the small church. Some one has been measuring old work, or carefully studying illustrations of old work in the numerous books of measured drawings. No longer do we find the heavy window mullions or gable copings, or clumsy buttress offsets that characterize those early attempts. In those days the suggestion to make the lights of the aisle windows sixteen inches wide and the mullions four and one-half inches would not have passed the "boss." In those days the classic architects, following the latest dictum from Paris, were doing the colossal in cornice, string and base, hoping to reduce all neighboring façades to a condition of servitude, by contrast. Window frames were placed on the very inside of the wall to impress the world with the thickness of the masonry. It was difficult to get the glass nearer the outside than the inside of the wall, where it should be to get the maximum of light with the minimum of glass. And the mouldings of arcades, doors and windows,—these have also gone through a refining process which has been good for their health.

We have certainly learned something about scale, after repeated visits to Europe—or the library—but what about some of the things we haven't learned—yet? Consult measured drawings, plans, elevations and sections of some English churches of unquestioned charm in "The Architectural Association Sketch Book" or Bowman and Crowther's "Churches of the Middle Ages." What is the secret of this charm, and how can we introduce some of it into our work? We should be able to reproduce that charm which is indwelling in the design, if we can dis-

cover where it lies hidden. We have all resorted to simulating age by sandblasting stone and woodwork, by chipping edges of mouldings and arrises, or by specially trained insects and artificial moss effects. This is not only inexcusable but is seldom, if ever, effective. The tricks are all so well known that we fail to deceive anyone interested enough to notice.

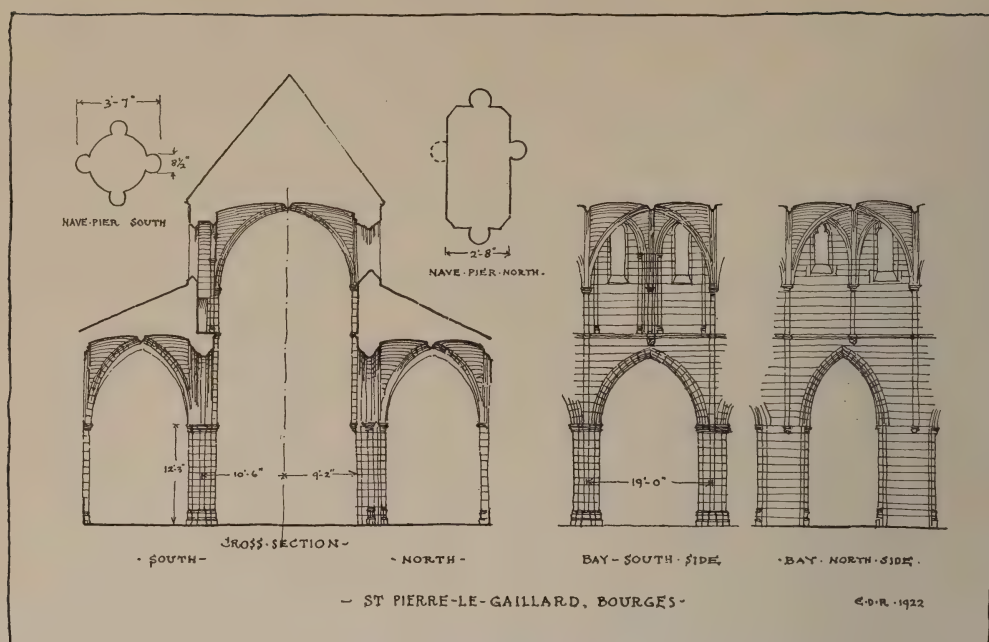
But our measured drawings show none of the softening and mellowing due to centuries of exposure to the weather, or to the use and abuse by many generations, and yet we cannot deny a positive charm in the mechanical drawings before us. They have a different facial expression from the recently completed quarter scales for Grace Church, Pretty Prairie. Our dividers will tell us many interesting things. They show us that, whereas Grace Church has seven bays in the nave all spaced exactly 14' 2" c. to c., worked out to five rows of pews per bay spaced 2' 10" back to back, the ancient example is not the result of any such cut and dried mechanical operation, but a thing full of freedom and with a fine disregard of axial lines, centre lines, and many other tricks and conventions held sacred in the draughting room. We shall probably find that no two bays are exactly the same width; possibly—yes, probably—those columns of the north arcade are not directly opposite to those of the south. And is there any good reason why they should be? If such a reason existed it would have been respected by the builders, of that you may be sure.

In the example before us, St. Peter's, Threckingham, Lincolnshire, a church seating about 350, we find the bay spacing down one side from east to west:—

12' 9", 14' 3½", 14' 5", 14' 1½"

and on the other side

13' 1½", 12' 6½", 12' 6½", 15' 6¾", 16' 2"



SECTIONAL DRAWING OF ST. PIERRE LE GAILLARD, BOURGES

No two columns are directly opposite each other, and no buttress is directly opposite any column. There are three different types of columns used, and two different kinds of engaged piers at the ends of the arcade. Just for the sake of being different, one arcade dies into a plain square corner. The south aisle appears to have wandered about three feet farther east than the north aisle; and it is difficult to tell whether the south porch belongs to the first or second bay. A glance at the longitudinal section reveals the fact that two of the bays contain semi-circular arches. The aisles differ in width by about eighteen inches, and the chancel tapers about one foot in its thirty-one feet of length. It is a nice little church and has served its parish well for six hundred years.

One of the most intriguing lines of investigation that can be followed during a tour of the Gothic cathedrals and churches of France and England, more particularly France, is just this; and it is safe to promise that the investigator will be rewarded in some measure in every genuine early mediaeval building he ex-

amines. It will not always be necessary for him to take measurements for enlightenment, for the variations are often obvious, sometimes all too obvious, as in the nave of Lincoln where the spacing of columns is in this order: 25' 10", 26' 6", 26' 7", 26' 3", 26' 8", 21' 4", 21' 2", to the great detriment of good proportion in some of the bays; for good proportion will not stretch to such limits and remain good. A refinement can easily degenerate into a vulgarity. But there are many other ways in which mediaeval builders produced that pleasing variety which goes far toward giving charm and interest to their work.

The bent axis, symbolically and aesthetically good, occurs everywhere among the old buildings. By means of this, all horizontal lines in perspective, take on a slight curve; and it is astonishing how easily the eye is deceived into thinking the whole interior is built to a curve. One bend will create the illusion, remove a vast deal of stiffness from the interior and make problems for the draughtsmen. In some ancient churches this bend is quite apparent, in others it has to be

sought. A good average deviation is one in fifty.

Much of the charm of the old work, that human quality, is the result of piecing together constructions dating from different centuries, done in different periods of architecture, and with little attempt to make things fit. In this mechanical age we find it difficult, if not impossible, to force ourselves into such a free-hand method of building, much as we may admire that quality in ancient work. Our office methods, our modern drawing instruments, the human instruments we must make use of in the persons of contractor, sub-contractor and workmen, the building committee and usually our own courage have made any departure from the mechanical a rather large undertaking. Twenty-five years ago we would not have dared to suggest graduated slate or uneven plaster. Now, the suggestions come from the clients, the material men advertise every kind of roof but the kind we used to specify; and as for uneven plaster surfaces, there is no end to the variations we now have on the market. Our specifications cards are all up to date in these respects, and the draughtsmen have the system of laying out graduated slate reduced to a fine art. In fact we have gone so far in this respect that there is danger of that very sophistication from which we are trying to escape.

In spite of the many improvements in this line, we have not yet learned to apply the same methods to bettering other things of equal importance in the building. Our eyes and our clients' eyes have been made to see the beauty of slates irregularly spaced, but they are still unable to recognize the desirability of irregularly spaced columns in a nave arcade, or unevenly spaced rafters in a roof, or panels of uneven size in a dado. Our dividers are too sharp, our triangles and scales too accurate. We have depended upon them so long that our eyes have lost their appreciation of the subtle charm of slightly uneven spacing. Why not space our columns, rafters and stiles as evenly as possible with our eyes? They and the building will be benefited and

undoubtedly beautified by the experiment.

The mediaeval builder did his utmost to avoid the (to him) unpleasing effect of the mechanical in his building. His efforts in this direction led him into doing many things which must have made his work more difficult. Any one familiar with the late Professor Goodyear's researches into this interesting field will not fail to appreciate this. For the information of any reader who wishes to pursue this study it might be well to add that these were published in *THE ARCHITECTURAL RECORD*, in 1895-96-97 and 98.

The mediaeval builder loved variety. When he was given a façade with two towers which for the sake of dignity should be alike in general effect, he never failed to make them unlike in their many details—not merely details of carving a tracery, but in larger matters such as the design and size of pinnacles, buttresses, arcading, dormers, even in the height and breadth of the towers themselves. An examination of the façade of Coutances Cathedral will reveal several things of interest illustrating this point. The southwest tower rises in four unbroken panels from a low base almost on the ground, to the main cornice level; while the northwest tower is divided into two stories, the upper and smaller in four vertical panels, the lower in two, resting on a high and steeply weathered base. These two towers appear at first glance to be the same width, but a tape line shows the former to be almost two feet wider—that is, below the main course. Above this line, where they assume the octagonal form, they are practically the same width.

If we compare the wall space between these towers and the central motive of the façade we shall notice differences both in the horizontal and in the vertical divisions. The windows just below and forward of these walls are different in form and design, their sills vary in pitch, the bases of their jamb columns occur at different levels. The gently sloping passage ways connecting the corner towers to the central feature are alike to the casual observer, but quite different to the one who stops to examine. Note the



PARISH CHURCH, NORTH ALLERTON, ENGLAND

variation in the transom bars of the extremely tall and slender openings in the corner turrets. The southwest tower shows six windows in its octagonal story, the northwest tower but five; and there are differences in the relation of each cornice to the arches below. The great western towers likewise show a varied treatment of belfry windows, and a considerable difference exists between the dormers attached to the spires. Even the finials vary in design.

If we compare this façade with the modern one by Gregoire at St. Ouen, Rouen, we shall soon learn why the former exerts an ever-increasing hold on our affections, while the latter leaves us cold. Each visit to Coutances begets another, while one to St. Ouen is enough as far as the façade is concerned.

It is not our intention to convey the impression that this peculiarity is the only mark of distinction between the genuine and the imitation in Gothic architecture. It is, nevertheless, one of the most important. The modern church

with "repeat" written everywhere, within and without, is merely exemplifying the modern spirit of business for profit. The Gothic cathedrals and churches could never have been produced if their builders had been prompted by this spirit; neither can our work today approach in quality that of the middle ages unless the motives and ideals are similar.

There were other ways in which the church builder of the middle ages avoided the mechanical exactness and regularity which characterize buildings of our own day. We have mentioned curvatures in plan, or bent axes. This idea was frequently carried still further by building walls to a curved line. For example, the walls of the cloister at Winchester College, designed by William of Wykeham, are all built to a curve. The cloister is about 130 ft. square, and the maximum inward deflection in plan is approximately six inches. This is also the case with the clerestory walls of Nôtre Dame, Paris, of Rheims, of Lichfield, England, and others.

The outward, and sometimes the inward curvature of piers, wall and vaulting shafts is common among the great cathedrals and many smaller churches of France. The English did not adopt the practice to any degree, possibly because their masons were less skilled, and their aesthetic sense less keen. As might be expected, this outward curvature is attributed by many to the thrust of the upper vaults. This, however, does not account for the inward lean of the choir of Paris, nor the westward lean of the westernmost piers in the nave of Paris and other important cathedrals; nor does it explain many other phenomena brought to light by the exhaustive researches of Professor Goodyear.

Variations in diameter and contours of columns, as well as their spacing, differences in the radii of their superimposed arches resulting in unlevel apexes, are ways and means we can adopt without undergoing too much mental or financial strain. Vertical curvatures unless carried consistently throughout the interior in every vertical line and plane will show to a decided disadvantage. This form of refinement is without question the most expensive and difficult to carry out, and it is doubtful if the gain is worth the effort.

The sloping floor may be employed as a means of elevating the chancel in cases where many steps are undesirable or impossible. This however does not admit the theatrical downward slope of the floor into the class of things acceptable in the Church.

From what has been said above it will be seen that given good proportion, scale, texture, color and honesty of construction, it is most desirable to obtain, by a scrupulous avoidance of that word "repeat," the positive charm which always results from great, but not too obvious variety, in combination with dignified uniformity.

To treat with any thoroughness the large question of the decorative elements in the church, its carving, sculpture, painted walls and roofs and stained glass windows, would soon overstep the limits assigned to this paper. The elaborate

system of symbolic decoration developed by the doctors and artists of the church prior to the 14th century, forms an interesting study for the church architect, and one of no small consequence if he is to become a master of his subject.

In its significance and purpose, Gothic decoration stands in sharp contrast to most of the conventional ornament which adorned the Greek and Roman temples. It was both symbolic and didactic. Its location, arrangement and treatment were governed by rules laid down by the ecclesiastical authorities and, during the middle ages, strictly adhered to. In the days when few could read, the sculpture and other decorations of the church meant much to the people. With the passing of illiteracy we have lost sight of the value of ornament as a mental stimulus and, as a rule, we now regard it only aesthetically. After trying in vain to discover the significance of scores of lion heads (all alike) protruding from the



Silver and Gilt Monstrance
CHRIST CHURCH, NEW HAVEN, CONN.
Frohman, Robb & Little, Architects

cornice of a public library, or of two others regarding the passing traffic from pedestals at the entrance, we turn with relief and satisfaction to the decoration on the neighboring church, where time and patient thought have been bestowed on this subject. There

the grape, the lily, the passion flower and the

pelican, the ox and the lion have a purpose above and in addition to their value as decoration.

The symbolism which gives life and value to the decorations of mediaeval churches was based by the early doctors largely on the more or less obvious relationship which exists between spiritual and natural things, partly on scriptural analogies and partly on arbitrary fancy or legend. Some ideas of the theology in mediaeval ornament would not be acceptable today, but there is much which could not be objectionable even to the ultra modernist. When we and our clients divest our minds of all that savours of foolish prejudice, much of the ornament which former Protestant generations have been in the habit of regarding as "Romish" will reappear on our churches, to their great benefit.

The system developed by the mediaeval churchmen determined the form and ornamentation of the churches, as well as matters of minor import. From earliest times Christians have adopted the cruciform plan with major axis laid east and west, enabling worshipers to face that quarter of the heavens held by all peoples as the holiest—the quarter of the rising sun. On the north, the side of darkness and cold, the subjects for decoration were taken from the Old Testament; while the south, bathed in warm sunshine,



Label Bosses—Subjects Taken from Local Flora and Fauna
WASHINGTON CATHEDRAL, WASHINGTON, D. C.
Frohman, Robb & Little, Architects

was devoted to the New. The western façade, catching the rays of the setting sun, was reserved for a representation of the Last Judgment, the evening of the world's history.

Relative positions, to the right or left, above or below, were always considered in the grouping of figure sculpture, the more being disposed

important personages above and to the right,

The significance of numbers was interesting and important in mediaeval symbolism, the numbers three, seven and twelve being considered the most sacred. As Christ chose twelve apostles, twelve denotes the universal Christian Church. Furthermore, it is the product of three by four; three, the number in the Trinity, is the holiest number, and denotes all spiritual things. The number four represented things of the earth—the four elements, the four quarters of the compass, etc. To multiply three by four was to infuse matter with spirit, that is, to establish the Church in the world. It was observed, also, that seven is the sum of three and four, and therefore stands for man in his dual nature. All that relates to him is ordered in series of sevens. The number eight signified regeneration, for as the first creation was accomplished in seven days, the next number, eight, was significative of the new birth. Hence the baptismal font is so frequently octagonal.

William Durandus, a writer of the 13th century, has much to say on the subject of symbolism and its application to church architecture in his work, "Rationale Divinorum Officiorum," the first book after the Scriptures to pass through the printing press. His observations are



The Architectural Record

January, 1925

PARISH HOUSE, EMMANUEL CHURCH, BALTIMORE, MARYLAND
Woldemar H. Ritter, Architect



The Architectural Record

January, 1925

Chapel Altar

GRACE AND ST. PETER'S CHURCH, BALTIMORE, MD.

Woldemar H. Ritter, Architect

quaint, ingenuous and full of interesting matter for the church architect. For example, the word church, he reminds us, is used to denote first a material building in which Divine offices are celebrated, and secondly, "A spiritual fabric which is a collection of the faithful . . . for as the material church is constructed from the joining together of various stones, so is the Spiritual Church by that of various men." After explaining the symbolism of the lime and sand which bind the stones together only after water has been added, he proceeds to explain the meaning of the various parts of the building.

Among the animals sculptured in the Gothic churches the ones most frequently met with are the four Beasts around the Throne seen by the Prophet Ezekiel and later by St. John at Patmos. Since the earliest times these Beasts have been regarded as symbols of the Four Evangelists. The emblem of St. Matthew is the man, for his gospel begins with the genealogical table of the ancestors of Joseph. The lion signified St. Mark, for his opening verse speaks of the "voice of one crying in the wilderness." The ox, the sacrificial animal, stands for St. Luke, whose gospel opens with the sacrifice offered by Zacharias. The eagle, who alone of created things is able to look full at the sun, is the emblem of St. John. But, besides representing the Four Evangelists, they pictured the four great mysteries of the Saviour's life—

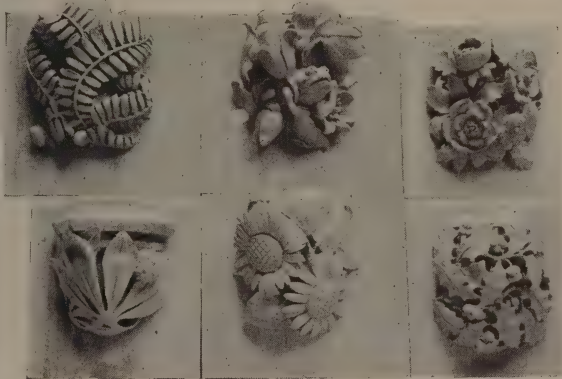
His Incarnation, represented by the man; His sacrifice, by the ox; His resurrection, by the lion, who sleeps with open eyes; and His ascension, by the eagle. They symbolize also the fact that man embraces the Christian life: first, by virtue of his reason; second, by

self-sacrifice; third, by his strength and courage in struggling against evil; and, fourth, by living above the sordid things of the world and by keeping his vision fixed on things eternal.

The lion also has an evil significance, and, in company with the dragon, the basilisk and the adder, is often sculptured beneath the feet of saints and apostles. Fabulous creatures form a considerable portion of the animal sculpture of the Middle Ages. Some of these were of ancient origin, full of interesting symbolism. Says Honorius of Autun, a writer of that day: "The unicorn is a beast so savage that it can be caught only by the help of a young maiden. When he sees her the creature comes and lies down in her lap and yields to capture. The unicorn is Christ, and the horn in the midst of its forehead is a symbol of the universal might of the son of God. He took refuge with a virgin and was taken by the huntsmen; that is to say, He took on human form in the womb of Mary and surrendered Himself willingly to those who sought Him.

"The adder is a kind of dragon which may be charmed by songs, but it is ever on the watch for charmers, and when it hears them lays one ear close to the ground and stops up the other with its tail, so that it can hear nothing and is safe from incantations. The adder is the image of the sinner who closes his ear to the words of life."

The basilisk, symbol of spiritual death, was a cock with a serpent's tail, according to the natural history of the day. The owl, which has eyes which cannot see clearly in the daylight, was a type of the Jews who, in their blindness, shut their eyes to the sun. The gargoyles, fantastic creatures, part bird, part beast, part rep-



Label Bosses—Subjects Taken from Local Flora and Fauna
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The Architectural Record

January, 1925

Façade

TABERNACLE CONGREGATIONAL CHURCH, SALEM, MASSACHUSETTS
Smith & Walker, Architects

[26]



View toward the Choir



View Toward the Gallery



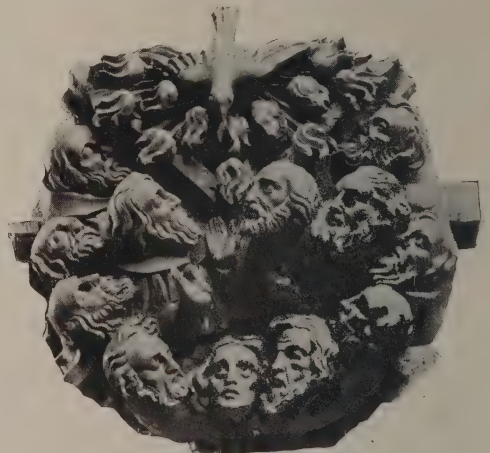
Vaulting Boss
"JACOB WRESTLING WITH THE ANGEL"

tile, springing from the tops of towers, or gathering in swarms high among the flying buttresses, were the spirits of evil driven from the church by the prayers of the faithful.

The virtues and vices were usually represented symbolically, in stone or glass, in all the great cathedrals. If in stone, they were sculptured on one or more of the great portals, where they were within easy view of the people. In the series at Amiens the virtues are draped figures, seated in medallions and holding shields on which their emblems are shown; the cross and chalice representing Faith, above a medallion in which is seen a man worshiping a monkey, Idolatry. In the next, Hope gazes longingly toward heaven and reaches for a crown, while Despair deals herself a death blow with a sword. Charity bears a shield on which is a sheep, symbol of unselfishness, while Avarice finds infernal satisfaction in filling her coffers with gold. Chastity carries a shield bearing a salamander, a mythical animal reputed to have the ability to live in flames and even to extinguish them. The shield of Prudence bears a serpent, recalling the Lord's injunction to His Apostles: "Be ye wise as serpents." Humility, Fortitude, Patience, Sweetness, Concord, Obedience and Per-

severance, with their opposing vices, are shown in like manner.

It is this symbolic treatment that makes the great cathedrals inexhaustible mines for study. The thought that lies behind each sculptured stone or painted glass is beyond our comprehension; and this thought, the theology and philosophy of that day, expressed with such unerring taste, places the churches of the 13th century in the front rank of architectural achievement. It will be seen from the illustrations given above, that the mediaeval artist and theologian understood the real value of symbolic art as a means, not only of expressing doctrine, but of preserving it from profanation. Moreover, the people understood this language of symbol, and were able to interpret in their simple way the carved and painted decorations on the churches and cathedrals. To them the lion, the dragon, the lamb and the pelican were something more than mere ornamental details, and their storied windows than pleasant arrangement of color. Art in that day was truly the handmaid of religion, supplementing the work of the clergy and making the churches and cathedrals veritable sermons in stone.



Vaulting Boss
"PENTACOST"

The LIBRARY OF THE ARCHITECT



By
A Lawrence Kocher

PART V

SELECTED LIST OF STANDARD WORKS RELATING TO ARCHITECTURE AND INTENDED FOR OFFICES OF ARCHITECTS

This list of books on architecture was prepared with the advice of prominent architects of the United States and England and is intended to include such fundamental works as the practicing architect and the draftsman will find helpful. It is not a complete bibliography of the subject, but rather an approved list of the most useful standard publications.

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P O R T F O L I O

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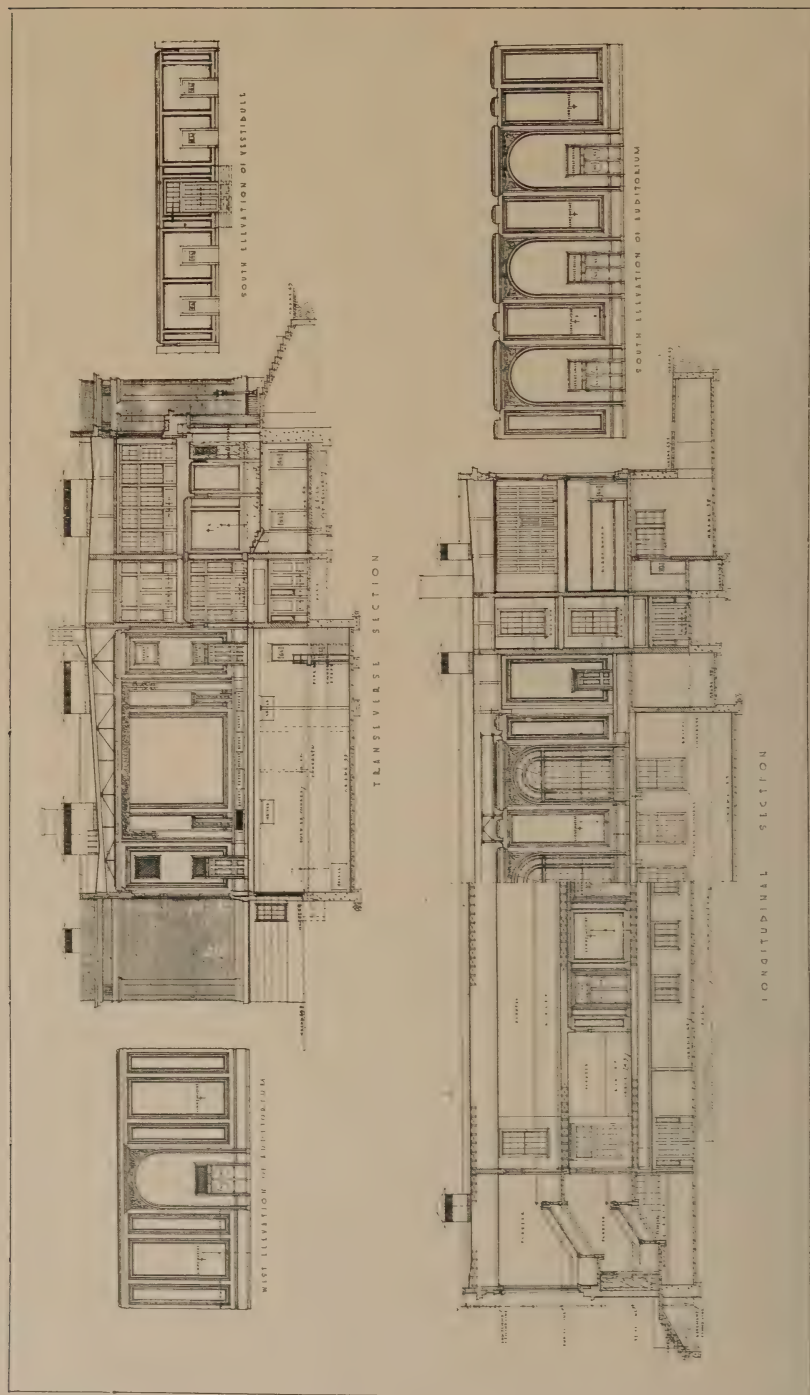
Entrance Detail
NORTH JUNIOR HIGH SCHOOL, WALTHAM, MASSACHUSETTS
Charles G. Loring, Architect



Façade

NORTH JUNIOR HIGH SCHOOL, WALTHAM, MASSACHUSETTS

Charles G. Loring, Architect



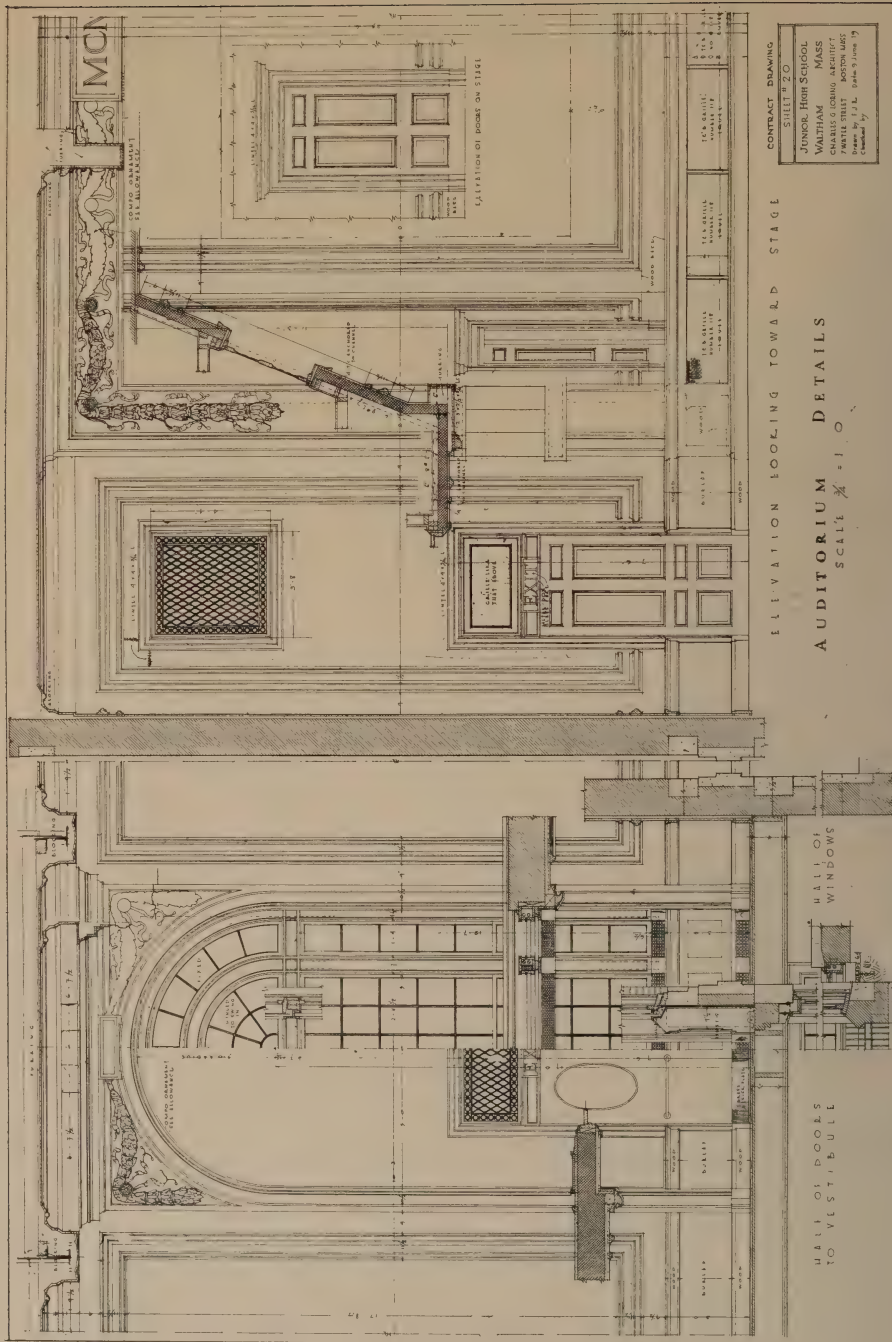
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Charles G. Loring, Architect



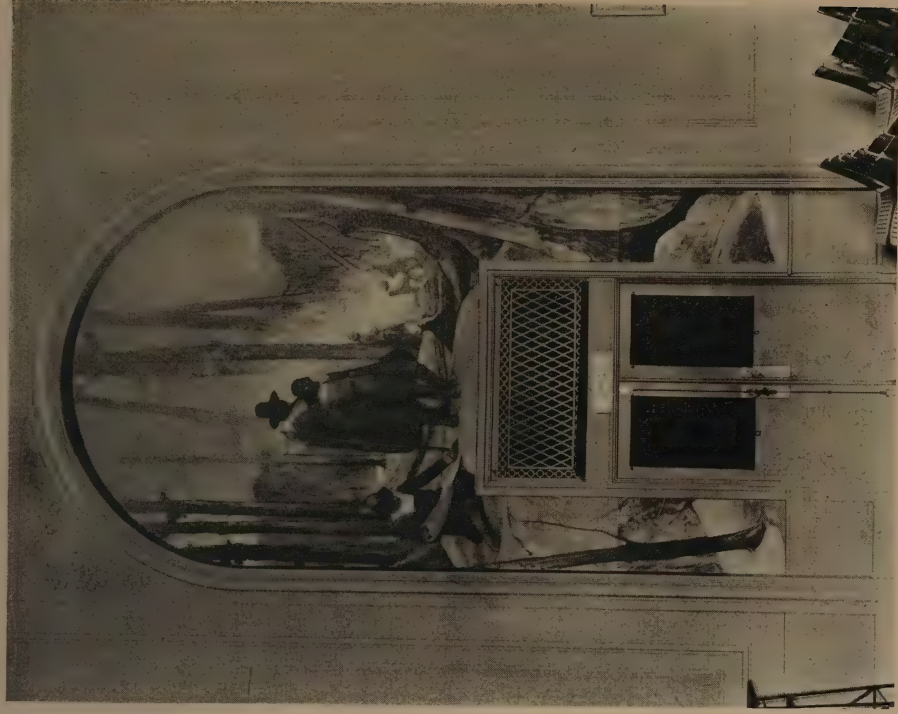
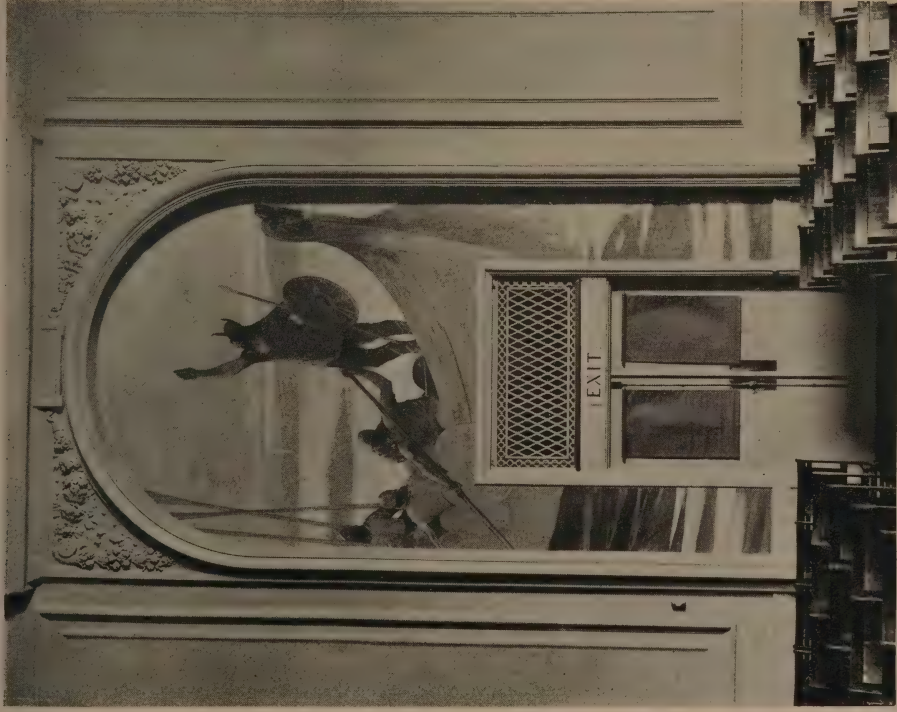
Auditorium

NORTH JUNIOR HIGH SCHOOL, WALTHAM, MASSACHUSETTS

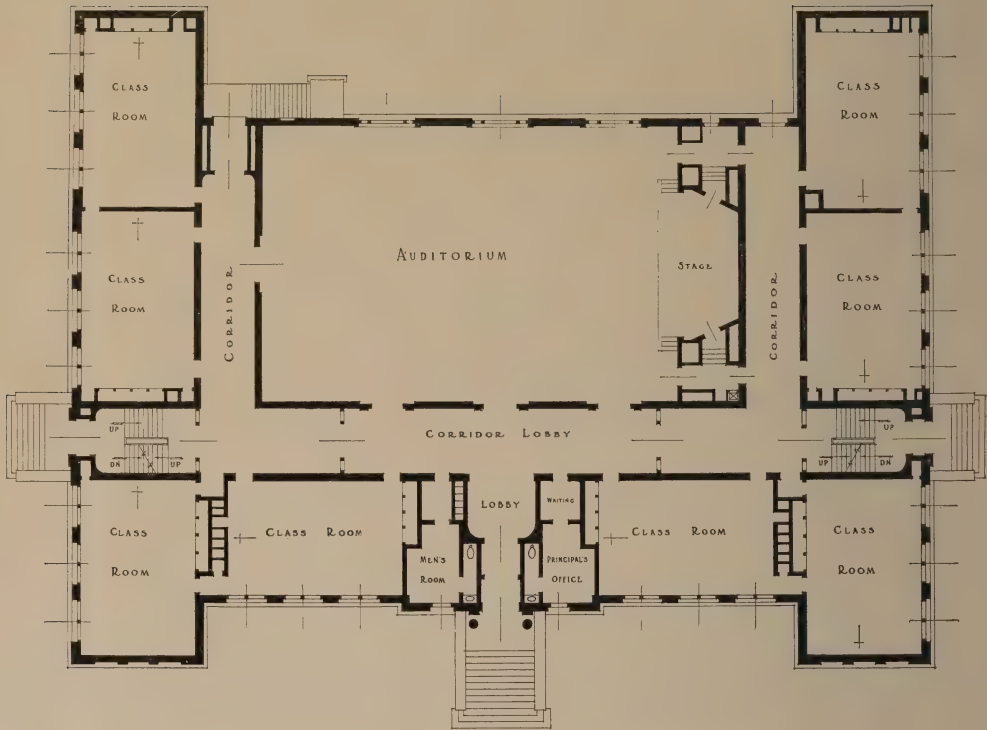
Charles G. Loring, Architect



NORTH JUNIOR HIGH SCHOOL, WALTHAM, MASSACHUSETTS
 Charles G. Loring, Architect



Mural Paintings in Auditorium
NORTH JUNIOR HIGH SCHOOL, WALTHAM, MASSACHUSETTS
Charles G. Loring, Architect
Paintings by Russell T. Hyde



Floor Plan
 NORTH JUNIOR HIGH SCHOOL, WALTHAM, MASSACHUSETTS
 Charles G. Loring, Architect



Mural Paintings in Auditorium
NORTH JUNIOR HIGH SCHOOL, WALTHAM, MASSACHUSETTS
Charles G. Loring, Architect
Paintings by Russell T. Hyde

THE MURAL PAINTINGS IN THE NORTH JUNIOR HIGH SCHOOL, WALTHAM, MASS.

At the time the North Junior High School in Waltham was planned, there was no municipal hall capable of seating seven hundred, so the School Committee decided to develop this unit larger than was actually needed by the five hundred and fifty pupils now enrolled. A public spirited citizen, in conjunction with the painter, Mr. Russell T. Hyde, agreed to install four mural paintings without expense to the city. The Auditorium is 75 x 50 feet over all, with a stage and two ante-rooms. On one side are three arched windows and facing them three arched panels with a fourth at the end opposite the stage. The windows and paintings are fifteen feet high and eight feet wide.

The choice of subjects is worthy of general note as it was based on the education of the pupils through their interest in the incidents depicted. The natural first reaction from the World War was to select military subjects, the struggle with the Indians, the Revolution, the Civil War and the War with Germany. It was decided that this laid too much emphasis on militant history. A series of studies were then prepared showing the peaceful developments which originated in this country in Waltham, including the first school for trained nurses, watch-making and the like, but these events did not lend themselves readily to dramatic presentation. Finally, four incidents in the history of Waltham were selected, although one, the landing of the Norsemen on the banks of the Charles River should perhaps be called mythical rather than historical.

The first painting depicts Leif Erikson, the Norseman who is reported to have sailed up the Charles River and landed in a part of Waltham called Norumbega. He is shown beckoning across the river in the neighborhood of Fox Island to a group of Indians.

The second picture shows Governor Winthrop and his son, who penetrated one time as far as the present Banks Square in Waltham for the purpose of surveying a road. An entry in the diary of Governor Winthrop naïvely says "this is probably as far west as a road will ever have to be built."

The third shows the Continental Army passing in review before George Washington, who paused to rest in Waltham while on his way to take command of the Continental Army.

The fourth picture shows the first church built in Waltham near what is at present the corner of Beaver and Lyman Streets. The costumes of this period date back to the time of Governor Gore, who was a resident of Waltham and was one of the first civil authorities to refuse instructions from the established church.



WEST HOUSE, KANSAS CITY, MISSOURI
Edward Buehler Delk, Architect



WEST HOUSE, KANSAS CITY, MISSOURI
Edward Buehler Delk, Architect



GEORGE ALEXANDER MCKINLOCK MEMORIAL COURT, ART INSTITUTE OF CHICAGO
CHICAGO, ILLINOIS
Coolidge & Hodgdon, Architects



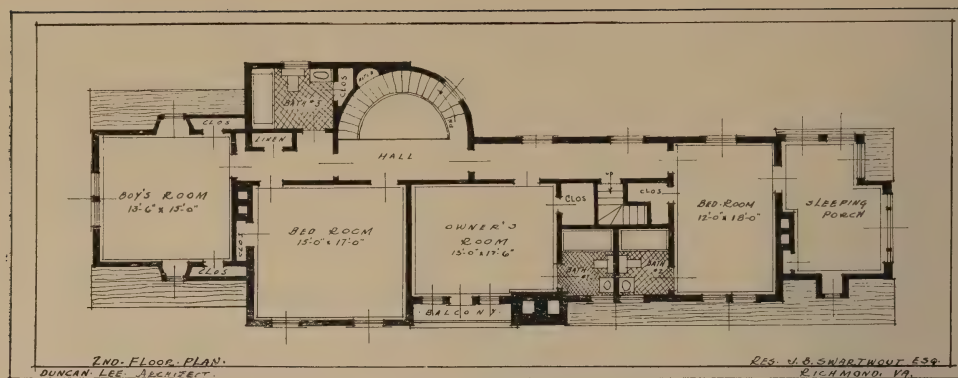
Façade

MULVANE ART MUSEUM, WASHBURN COLLEGE, TOPEKA, KANSAS

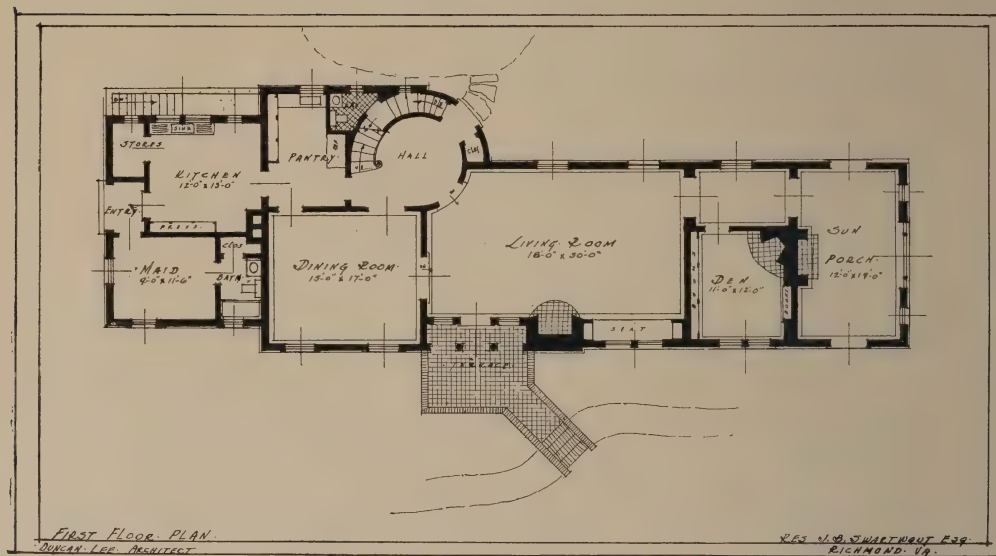
Thomas W. Williamson & Company, Architects



RESIDENCE OF J. B. SWARTWOUT, ESQ., RICHMOND, VIRGINIA
Duncan Lee, Architect



Second Floor Plan



First Floor Plan

RESIDENCE OF J. B. SWARTWOUT, ESQ., RICHMOND, VIRGINIA
Duncan Lee, Architect



Bay



Entrance Detail

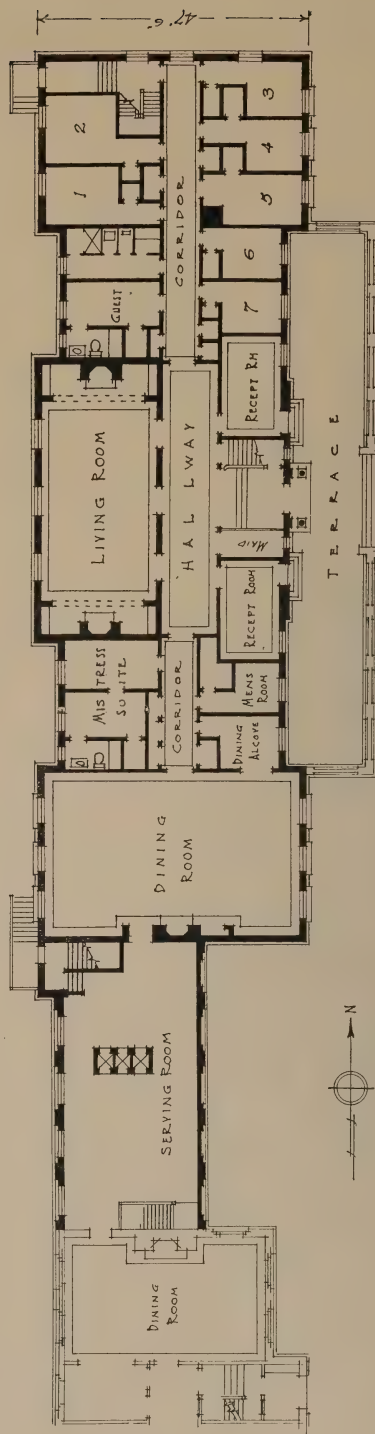
RESIDENCE OF J. B. SWARTWOUT, ESQ., RICHMOND, VIRGINIA
Duncan Lee, Architect



Le Baron R. Briggs Hall, Radcliffe College, Cambridge, Massachusetts
Blackall & Elwell, Architects



SECOND FLOOR PLAN



FIRST FLOOR PLAN

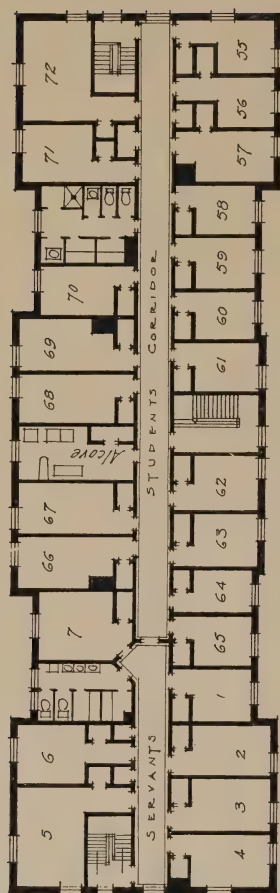
Blackall C. Elwell Architects Boston Mass.

LE BARON R. BRIGGS HALL, RADCLIFFE COLLEGE, CAMBRIDGE, MASSACHUSETTS
Blackall & Elwell, Architects

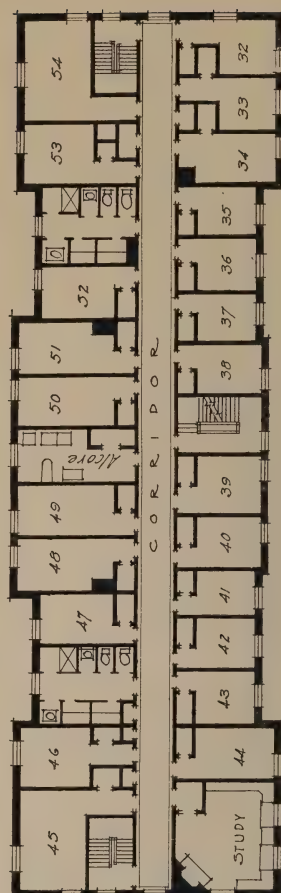


Entrance Detail

LE BARON R. BRIGGS HALL, RADCLIFFE COLLEGE, CAMBRIDGE, MASSACHUSETTS
Blackall & Elwell, Architects



FOURTH FLOOR PLAN



THIRD FLOOR PLAN

Blackall & Elwell Architects Boston Mass

LE BARON R. BRIGGS HALL, RADCLIFFE COLLEGE, CAMBRIDGE, MASSACHUSETTS
Blackall & Elwell, Architects



Second Floor Hall



Living Room

LE BARON R. BRIGGS HALL, RADCLIFFE COLLEGE, CAMBRIDGE, MASSACHUSETTS
Blackall & Elwell, Architects

LE BARON R. BRIGGS HALL, RADCLIFFE COLLEGE,
CAMBRIDGE, MASSACHUSETTS

A new dormitory for Radcliffe College has been built in honor of LeBaron Russell Briggs, president of Radcliffe College from 1903 to 1923.

Two things governed the design of this building. First, it had to be connected to the present Barnard Hall so that one kitchen and one heating unit would serve both buildings. Second, it must accommodate 75 students.

These requirements necessitated placing a common serving room between both halls, and the dining room of Briggs Hall and the servants' rooms on the south end of the building, to afford direct communication with the serving room.

Much time was spent on the size of the students' bedrooms, as this would determine the size of the building. It was decided to use a 10'0" x 14'0" room. Later, when the bids were received, this was reduced to 9'0" wide and in spite of certain misgivings, has proved satisfactory.

The special features in the building include an alcove on each floor used by the students for cooking, washing, etc. It has a tile floor and hard plaster walls. On the second and fourth floors a drying closet has been placed. On the third floor the closet is enlarged to form a store, run by the student government, where small articles may be purchased. A small suite for guests of the college has been placed on the first floor. A dining alcove connected to the dining room has been provided for the students' use for birthday parties or informal gatherings. On the third floor is a study given by Margaret Coleman Waites, where her library is kept, and where students may retire for study. Many of the rooms have been furnished by the Alumnae or friends of the college, the living room having a memorial fireplace to President Briggs and Martha Carter Cutler.

To control the entrance to the hall a maid's station is placed at the front door, where the public telephone, the dormitory telephone reaching all parts of the building, a system of call bells to each of the students' rooms, the fire alarm and other signals are concentrated.



Brush Memorial
LAKE VIEW CEMETERY, CLEVELAND, OHIO
Wright & Hohl, Architects



Brush Memorial
LAKE VIEW CEMETERY, CLEVELAND, OHIO
Wright & Hohl, Architects

The FUTURE OF LOW-RENTAL HOUSING IN AMERICA ~

By
Frank Chouteau Brown

WHAT IS TO BE the future of low-rental housing in the United States? Now that we have made entrance into this country from Europe so difficult, restricted the number of immigrants, and taken steps to select them almost exclusively from the more skilled workmen of the northern nations, are we prepared to meet even the minimum housing requirements to which these workmen have been accustomed? If so, what have we done, or even planned to do, in that connection? Bear in mind that these restricted immigration laws are in actual operation. These workmen are arriving on our shores. Where can they go to find good, cheap housing in your community, Mr. Reader? It is you who are responsible for thus restricting and selecting our immigration; for thus raising the bars and, as we hope, the living standards, of our citizen aspirants. What have you contributed toward clean, sanitary living accommodations, at a proper cost?

One nation whose immigrants we are particularly inviting to come to us is Germany. Germany has been for years more than any other country (except perhaps England) an exponent of paternalism in providing for the health and housing of her workingmen. In large part this has been done by corporations; but in Berlin, and other cities, it was the Government that directly interested itself in seeing that the slum districts were cleaned out, and all the old houses in them replaced by new tenements of superior convenience and at low rentals.

Last month we saw what had, in part, been done in England, Belgium, Holland, Norway and Sweden, by Governments, Municipalities, Workmen's Societies and others. Some idea also was given of the large scale on which Government, State and City funds were being used to pro-

vide better housing for the lower paid laborers. It was made evident that, in Europe at least, there is by now a widespread realization of the responsibilities of the individual and the Government toward the human elements entering into their economic working machine.

Where the trade does not provide a living wage and that trade is necessary to the wellbeing of a group, the general funds are taken to make up this economic deficit; and the taxpayer is called upon to guarantee the amount necessary for that purpose. His final responsibility is not for a moment questioned. In some part, the individual employer, the organized workmen's unions in these various trades, are also engaged in meeting the situation. But when their efforts fail, or when the matter of housing the unemployed, or crippled soldiers is concerned, the common funds are turned to.

These modern methods have been long established and are well worked out by now. Amsterdam built houses for rental as early as 1874, but, even in England, the speculative builder was the principal source of supply of new housing up to the beginning of the world war, and the only definitely organized housing schemes on any adequate scale, were the enterprises of the more enlightened employing corporations, and these were of course restricted to the towns where their activities were localized.

Such has also been the situation in this country. We have been willing generally to allow the speculative builder to buy land and erect houses on it, in all our cities and suburbs, and this he was content to do as long as he was able to bring in a return sufficient to repay him for his time and energy.

But with recent increases in the prices of labor and materials, the specu-

lative builder has found it profitable to supply only higher priced housing. In that field alone has he found sufficient remuneration to encourage him to continue. The rents the lower paid classes could afford are no longer attractive to these speculators, so they no longer are concerned with building to meet the needs of the lower rental tenants.

The speculative builder has regarded it as his province to buy a tract of land as cheaply as possible, divide it into as small lots as possible, build on it as inexpensively, and sell the resulting product at as high a profit as the traffic would bear. It is the more remarkable that our wealthier home owners have been so ready to contribute to his profits by buying their houses of him.

In the meanwhile, however, he has forsaken altogether the field of the low-rental houses, the low-cost multiple dwelling. As the costs of living have steadily advanced, so has he as steadily progressed from low-rental to high-rental prospects; until we have reached the present impasse—a matter not generally realized.

We must now recognize that the rental of a small, respectable house or apartment, built under present conditions, if producing any sufficient income on the investment, is necessarily too high for the majority of our labor or clerking class to pay from the wages they receive. We must, therefore, concern ourselves with a solution of this economic problem.

The situation is inescapable. If we do not pay workmen enough to live on (and despite the yearly advances demanded by unions, there is still no prospect of their pay advancing in many trades to any amount that *will* be adequate), then either the employers must meet the deficit in some other way, or the community itself *must* do so. The employer abroad has recognized this responsibility and has tried to meet the need, with only partial success. In this country, as we have seen, he has entirely failed, as a class, in realizing even that he has any responsibility in the matter. And so has the community, both as a whole, and in its component parts!

As a stream can rise no higher than its source, so we cannot expect the commu-

nity, city, state, or national government to recognize any problem of the body politic, until *after* it has become the concern of the majority of the individual members. That is the pressing nature of the present situation. The problem is one of long standing. We have wilfully complicated it by recent legislation, and we have not even begun to realize the inevitable results. So, how much time must elapse before we can convince our representatives of this government of the seriousness of the situation? Can this be done before our entire social system has been inoculated with the bacillus of Bolshevism, or widespread social discontent?

Having tried every avenue of escape without success, can it be that we are being driven into Government ownership? We have had experience in the practical workings of Government ownership in our railroads, and even in housing itself during the war; and as a nation, we are convinced of the fact that, in a democracy, at least, it is neither an economical nor an efficient method of administration. By and large, we are convinced that most business enterprises, even Public Utilities, are better administered by individuals directly responsible to their stockholders, than by public servants, who do not seem to realize their responsibilities to the abstract "public" they represent.

When private capital will no longer enter the legitimate business of building and selling or renting houses, and there exist many members of our body politic who are demanding, and are entitled by our constitution to have healthful homes, what is to be done? We have already tried out any number of schemes, and found them inadequate. We have experimented in all manner of ways to reduce building expense, and despite them all have been forced to acknowledge that it is likely to continue increasing year after year. Again we turn to Europe.

In Europe it is now accepted that, failing any other resources, the Government *must* assume the responsibility of housing those who cannot find adequate accommodations for the price they can afford to pay. It is also recognized that the time probably will never return when



Fig. 51

Eight Family, Double Apartment, Cottage Type of Municipal Dwelling in the Schalkburgerstraat, Amsterdam
J. Gratama, Architect

private enterprises will make enough profit in building for the majority of the people, to again engage in that business. Therefore, it is probable that it will be in the future, always the task of the Government to provide housing for the greater part of the population.

Besides the Government, either national or local, only one other means of providing low-rental housing has proved successful in Europe. This is the "Public Utility Society." It is worth while to give a more exact idea of this means of relief in England, for instance.

A Public Utility Society is a "limited company" formed to comply with Treasury limitations, registered, and under the same Government control as other Charitable and Provident Societies. It may be formed for various objects, but the power to deal in land, and provide and manage houses is usually included, while the tenants are generally shareholders in the Society. This fact removes a large part of its "charity" onus and makes the securing of housing relief expressive of individual independence and initiative, therefore an aid rather than a deterrent

to the desired building of character.

Recently, the Government has lent up to 75% of the construction costs, but with increased restrictions as to sizes of houses, designs and rents, and interest at $4\frac{1}{2}$ to $6\frac{1}{2}$ %. On this basis either the tenants or the promoters subscribed the remainder of the capital, or an additional amount was made up in "loan stock." Even with this Government aid, however, it has been found that the middle class rather than the actual workingman benefit most from the housing actually built.

Early in 1923 an Act was passed granting a definite sum per house per year for a twenty-year period, by the aid of which it is hoped these societies may be enabled to provide housing at lower cost to the working classes, and at the same time obtain a small but certain return on the money invested. A net 3%, however, is all that is expected in this sort of company abroad. Every energy is exerted toward obtaining the most for the worker-tenant. The members of such a society are not concerned with making profits for themselves or their stockholders. They are building for the perma-

nent social betterment of the individual, the family and their community or country. The capital employed barely pays its way; the members borrow the greater proportion of the needed funds at the lowest possible rate from the city or country. They obtain for their tenants all the results of efficient administration; of quality buying of material, of working in "stock" units or "repeats." They employ all the devices of the speculative builder in purchasing property and building up large tracts in a uniform development, and besides save far more from the low rates at which money expended for public good is obtained from Government agencies.

This "Public Utility Society" is not the only means utilized. The scheme employed in England was used as an illustration because of the more nearly parallel methods of thought common to the two English speaking countries. Let us look at other European countries not so generally regarded as "advanced."

Czecho-Slovakia had over one hundred societies operating in this field before the war; now there are more than 850. Before the war 3,386 houses had been built at a cost of about 25 million kronen. Between the end of the war and June 30, 1923, 14,953 houses were added at a cost of about 1,500 million crowns. In addition to the money available from members' shares, and from savings deposits, the loans from other institutions are guaranteed by the state. Up to 1918 this guarantee extended to 90% of the cost of building. Since that date the state obligates itself to pay the loan if called in, and any annual deficit up to its proportionate part of the loan. From 1919 to 1922 the amount that could thus be secured amounted to 90% of tenement house costs, and 80% of private dwellings. Since 1923 it has amounted to 70% of both. The maximum area allowed for rooms (net) in buildings to which this Government assistance is to be extended, is 80 square metres.

In France the financial resources available for encouraging workingmen's dwelling construction comes not only from the shares of members of the societies themselves, but also from state

loans at 2% to 2½%, repayable in upwards of 40 years in amounts extending up to 75% of the cost of housing not directly subsidized, and to 52% of those subsidized. An amount equal to one-third of the cost of houses is available for large families, provided two-thirds of the investment are for dwellings of this type, and rents are established at not less than half the maximum letting value prescribed by law. The state has 30 million francs available yearly for these purposes. The "Coöperative Societies" have not used their funds so much for houses of this type as "Public Offices for Cheap Houses" who have built many dwellings for large families. Members desiring to own houses subscribe for shares to the amount of 10% at joining, and pay the remainder in from seven to twenty years. State departments may subscribe to an amount of two-thirds of the paid-up capital of members. The houses cannot be sold under cost nor let at less than 60% of maximum values established by law, or 50% to families with four or more children.

It will be seen that France, particularly, aims to assist the large family, which, in her fear of a lowering birthrate, is understandable. The architectural expression of the Slovak or French idea may seem strange to us, while English achievement in this line is perhaps too familiar. What has been done by Germany of late years has not been so well nor so thoroughly done as before the war. Nevertheless, from a review of these nations, it appears that the paternalistic form of Government possesses certain advantages in advancing the cause of humanity, that do not appertain naturally to a democratic form.

Holland provides most comprehensible illustration, but we must remember that in the cities of Holland are still to be found some of the earliest, as well as of the latest and most successful exponents of both the "Society" and Government low-rental housing. First let us take two similar examples, one from each type, and place them side by side. Fig. 51 is a municipally built and rented house in Amsterdam, controlled by the Housing Department. Fig. 52 is owned by a "Pub-

lic Utility Society," the "Algemeene Woningbouwvereenging."

These illustrations show how the effect of the cottage type may be embodied in the low-rental city apartment plan, such as appears in Figs. 53 and 54 in both the single and double width plan. These apartments contain five rooms; three bedrooms, one of which may be used as a dining room, a living room—with or without a bay—and a kitchen. They open

tectural expression. These examples are offered in comparison to the two and three "decker" tenements of American custom, which, so far at least, have been our height of achievement. The rental of our wooden substitutes averages from \$30 to \$50 a month, in contrast to the comparatively expensive rentals of from \$10 to \$15 for the houses shown. Others nearly as good are available for rentals as low as \$6 to \$7 a month.



Fig. 52

Eight Family, Double Apartment Cottage Type of Dwelling in Rows
Public Utility Society Building, Amsterdam
J. C. Van Epen, Architect

at the rear on the balcony, and are as simple and economical a use of the space as is possible, the variations being largely those governed by the sizes of the rooms.

In the dwellings shown these plans are reproduced on two, and occasionally on the third, or attic floor. In the apparently double family unit shown in Fig. 51, for instance, at least eight families are accommodated and each has its individual entrance and balcony. Fig. 52 shows how these double units may be lined together in longer rows, after the prevailing European fashion, varied by occasional bays and by disposition around open squares, a permanently appealing archi-

These plans may also be utilized for taller structures (Fig. 55) where a more modern type of architectural design is exemplified. Here the individual entrance is abandoned and the apartments are reached from a common stairway (Fig. 54). Fig. 56 is another illustration of the taller building and lower rental type, but here we can see the balcony as an occasional element in the architectural design, a detail that has been more interestingly developed in some still more recent architectural designs in the Netherlands.

The real value of the balcony is better illustrated in Fig. 57, from a snapshot made this summer by Mr. Frank A.

Bourne in Holland. This is no set and formal picture, but gives an intimate glimpse of the life of the inhabitants, gossiping in the rear block passage, with balconies in use in both the upper center and the extreme left. This view shows the rears of some of the smaller, lower-priced dwellings, just as Fig. 58 illustrates a more communal treatment of the space inside a block of taller dwellings. Finally, to illustrate again the modern tendencies in architectural treatment, Fig. 59 shows an unhackneyed but directly practical handling of the corner lot, with a modified bay treatment, evidently planned to secure exposure and sunlight against somewhat adverse conditions, an interesting experiment that does not demand a reduction in the number of stories, an element generally presented by such a problem. This and Figs. 55 and 56 portray some of the tendencies of the younger school of European architectural designers.

All these views illustrate the application of similar plans and designs to a common problem in both city built and owned structures and those of the "Public Utility Societies." Thus we have in our mind's eye some idea of the accomplishments in Europe along the lines we have been indicating.

As far as the writer has discovered, more experiments along the lines of low-rental housing by State and Municipal assistance have been made in Massachusetts than in any other state in the Union. They are therefore here briefly related.

First among these was the passage in 1911, after several years of effort, of the Act creating a "Homestead Commission" in Massachusetts, an experiment in housing with the aid of state funds. In addition it was to foster city planning in the smaller communities. After the Commission was established, Lowell was selected as a representative mill-town. A tract of seven acres was secured within walking distance of city industries, and an appropriation of \$50,000 was made with the expectation of more to be furnished by the state as it was needed. Twelve thousand five hundred dollars was paid for the land, and twelve four and five-room cottages were started. All

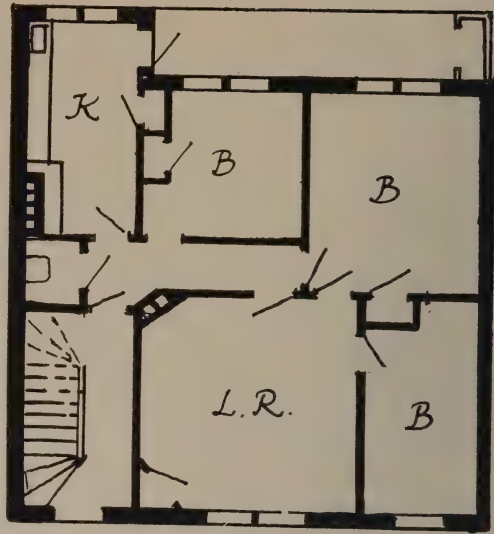


Fig. 53
Typical Single Unit, Five Room Apartment Plan
Housing Department of Amsterdam

the houses built were sold either before or immediately after completion. The preference of the purchasers was for the single dwellings even at a higher price. The selling prices ranged from \$2,400 to \$3,100 a house. In addition to an initial payment of \$100, monthly payments of from \$17.63 to \$22.88 paid for the houses in about 17 years. The money, as repaid, was to revert to the State. The Legislature failed to appropriate the additional amounts necessary to construct forty or more houses, as intended; and this alone prevented the completion of the experiment. Although the element of wartime costs entered into the demonstration, the houses were actually built at an average cost per room of \$500 for the five-room houses, and a considerably lower rate for the four-room semi-detached dwellings.

Even though the project has never been completed, the Commission believes it has demonstrated "the possibilities of constructing, by the use of State funds, houses on fair sized lots of land to be sold on a long-term amortization plan, returning to the State its investment with interest." The Commission also believes that the state should appropriate the money necessary to utilize the land originally purchased, by constructing the

thirty-five additional houses. They also believe that until the whole group has been completed it will not be possible to demonstrate any of the advantages of community spirit.

The Commission also made a study of conditions in various localities in the state, and, as long ago as 1918 reported that "types of dwellings under construction in sections now suburban but rap-

to learn whether or not it is possible to build wholesome houses within the means of low-paid workers."

During the acute housing shortage following the war another act was passed in Massachusetts "To authorize Cities and Towns to provide shelter for their inhabitants in case of emergency."

Section 1. A city or town in which the Mayor or majority of the board of select-

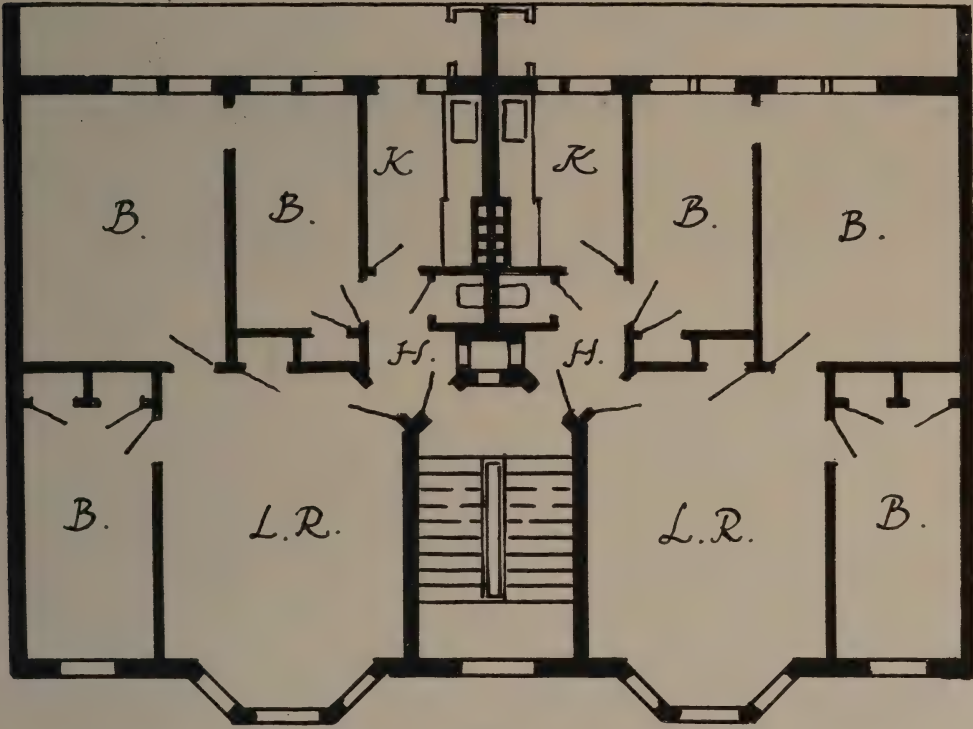


Fig. 54

Typical Double Unit, Five Room Apartment Plan, Housing Department of Amsterdam

idly becoming central clearly demonstrated the failure of capital to realize and provide for the real need of the inhabitants."

In summing up their recommendations for action by the Legislature that year (1918) the Commission stated as follows:

"There are not enough wholesome low-cost dwellings.

"There is no prospect that present methods will ever supply enough, unless the state encourages their construction.

"Therefore the state should experiment

men proclaim that a public exigency or emergency or public distress exists because of an insufficient supply of shelter or available dwellings for its inhabitants may acquire by purchase, or take by right of eminent domain, unimproved or improved real property in fee or for any less estate, and improve or dispose of same in such a manner as to provide shelter for its inhabitants and to afford adequate relief in case of a public exigency, or public distress, as aforesaid.

Section 2. In case a city or town takes property hereunder by right of eminent domain and is unable to agree with the owners as to the damages to be paid there-



Fig. 55

Apartments in the Henriette Ronnerstraat, Public Utility Society "De Dageraad," Amsterdam
M. de Klerk, Architect

for, the same shall be assessed as in the case of land taken for highway purposes, and shall be paid by the city or town.

Section 3. For the purpose of this act, a city or town may borrow such sums, in excess of a statutory limit of indebtedness, as may be necessary, but not exceeding one per cent. of its assessed valuation, and may issue therefor bonds or notes for periods not exceeding ten years, and otherwise subject to the provisions of chapter 719 of the acts of 1913 and amendments thereof, so far as applicable.

Has any other state in the Union gone as far as this? Or any city or town, either? It is on record that in Milwaukee in 1920 a "Coöperative Garden Homes Company" was organized under a special law permitting Municipal and County authorities to subscribe to shares, with prospective tenants and others interested, somewhat along the line of the ordinary coöperative bank or building society.

In Massachusetts there has been another attempt in this direction. Mayor James M. Curley of Boston organized a "Boston Conservation Bureau," intended originally to carry on several activities that the city had been conducting since the end of the war, and appointed Mr. M.

Douglas Flattery chairman. This bureau intended to carry on some outdoor "Park Shows," study means of relieving the housing shortage and the transportation problem in Boston, and experiment along certain lines of public preventive medicine and hospitalization—all valuable and altruistic public betterments of health, education and living conditions.

A study was made of housing conditions, and the possibilities of municipal aid for them. A special loan was proposed as a relief, at low rates of interest to the city, of a sum of money (\$1,000,000 annually was the amount under consideration), that could be used to build large blocks of houses, all of a "unit plan," similar to that popular in the vicinity of Philadelphia. Each unit would consist of a self-contained two-family dwelling, five rooms to each floor, on narrow lots, between party walls, with exterior brick walls. These could be built at a cost that would enable the tenants to gradually pay for the building from their monthly rentals. Then, as soon as the investment had been placed on a customary bank-loan basis (i. e., the equity

in the property brought by the series of payments to the point when the owner had paid for about one-third of the total cost of his unit) the mortgage would be privately placed, and the sum repaid to the original loan fund. By this means it was intended to make the original loan turn over again and again, in the development of new tracts of property, until an appreciable relief in the housing situation was apparent.

It was not proposed to have these funds used or the developments carried out under the usual municipal auspices, but by a committee of experts, so that the occupants might have all the possible benefits from building in large units, buying property at low prices, etc., even saving over the methods of the speculative builder, as the city could borrow at rates much lower than would be possible from private sources.

As to the occupants and future owners, what of them? It was planned to select them carefully from among the working group only, in families whose total income would be under an established yearly sum appropriate to such a type of house.

They would have to be respectable families, citizens of not less than five years residence, preference given to families with at least five children. It was planned to make the monthly rental low enough to be on a better basis than the ordinary rental common in this class, even though it would take much longer to pay for the house.

The owner was to be restricted in his price to his tenant, and compelled to maintain his sub-rental rate at the sum established by the bureau, as long as he owed for any part of his dwelling. This practically gave control over the property for upwards of twenty years. If, during that time, any occupants should complete payments, they would hardly be able to obtain any higher rental for their second apartment than was the "going rate" elsewhere in the community group—and finally, the very fact of the rentals being established at a definite rate, would go far to place all similar housing accommodations in other parts of that general district at approximately the same rentals unless there still existed a considerable shortage,



Fig. 56

Apartments in the Zaanstraat, Public Utility Society "Eigen Haard," Amsterdam

M. de Klerk, Architect

in which event it would be the purpose of the bureau to continue supplying housing as fast as it could be absorbed until the entire community would have equal rentals, on an efficient current building cost basis of fair return on the investment, thus placing the whole venture on a normal economic relation to costs, supply and demand.

It is obvious that once this process was in operation, the private builder would be

economic rate for all the property owners concerned.

This project advanced far enough to make definite plans, to estimate them and to secure options on two large areas of land in central Boston on a basis that would have made possible the sale for about \$150 of a lot of about 3,000 square feet, deep enough to carry a two-car garage.

It was figured that a million dollars



Fig. 57

View in Rear of Low-Rental Tenements Showing Yards and Balconies
Housing Department of Amsterdam

driven out of this particular low-rental building field; but he did not exist at that time as an element. Holders of old property could still derive a rental income based on the cost of remodeling their property at current prices. Even after many of the occupants had purchased their homes, the rental values could be maintained by building from time to time a block of new houses, to keep even with the growth of the demand, putting the new property on the market at a rental that should continue to maintain a fair

yearly would build about 200 homes, and that each appropriation would have been repaid in about five years, as the payment of only 5% in addition to the annual interest payments, would reduce the mortgage to the point where it would be then available for refinancing the houses, on the basis customary in savings bank mortgages.

It was expected that the city could finance these operations by loaning the money at about 5%, and still make a small profit over what it would have to

pay for the money itself. Money that was at first considered available for this use, was afterwards found legally unavailable. The project, therefore, is still in abeyance. This seems to be the entire record of accomplishment in this country.

It has been the purpose of this series to preach individual responsibility in this vital matter. Accepting this, it must appear that we should invent some new, or make use of some existing, means of uniting to improve the bad housing conditions we know to exist.

We have been unable to find any practical existing means to effect this purpose. We have been unable to discover much of assistance in any of our experiments, except on the basis of individual economical administration of public funds along such lines as have been shown to be in practical use abroad. But we have still to devise, and pass, the laws making such large sums of public money available. That accomplished, it is apparent from what we have already done in this country, that we should not have much difficulty in organizing its proper employment. Much of the necessary machinery and experience already exists. The social worker, the city planner, the architect, all stand ready, as never before. Unfortunately, we can expect little aid from organized labor. They do not possess either the vision or the intelligence to reason beyond their hours of labor and the price per hour. Union labor is at last entering the field of finance on its own responsibility. It may yet find there the means of self-education as to its own position in the social scheme.

A bank for the exclusive use of the farmer is organized, to be run with Government money; in other words, your money and mine! Why, therefore, cannot the Government make loans to builders, thus perhaps avoiding the lament of the builder that he cannot compete with Government capital, if it is invested in his business of building and renting. Instead of competing, let the Government money be used to aid him; that is, if he is disposed to enter the field of low-rental housing. This makes the low paid workingman a favored class, perhaps. Who more than he, deserves it? If we do not



Fig. 58
Community Garden in Rear of Apartments in the
Vaartstraat, Public Utility Society "Patrimonium,"
Housing Department of Amsterdam
Kuipers & Ingwersen, Architects

pay him a fair working wage, are we not in duty bound to provide him with a healthful habitation, if only that he may rear his family to be good citizens?

The National Housing Association has stated that three vital factors are blocking low-rental building today—high interest rates, high cost of building material, high cost of labor. Let us briefly consider these factors. A permanent loan can be secured today as low as $5\frac{1}{2}\%$, on well secured risks. This is not low enough for the class of housing we are interested in. Government credit has got to be extended to help the situation. In England the original financing on work of this kind has rarely been more than $3\frac{1}{2}\%$, and often as low as 2% . We can expect no private money in America to become engaged on as low a percentage as this.



Fig. 59

Corner Apartment in the Amstelveenschweg, Public Utility Society Building
Housing Department of Amsterdam
J. C. Van Epen, Architect

High cost of building material and labor is the next factor. These causes are one and the same. Building material is more costly because of the higher cost of the labor that goes into its manufacture. The cost of brick, clay or iron metal, in the earth, is no more now than when the world was made, but the process of mining, manufacturing, transportation and erection, is continued only by the use of more and more costly labor, year after year. It has been said that 75% of a building cost is labor cost. If all labor could be estimated back to the source, it is more likely that it would bear a 90% to 95% ratio to the total.

It is this labor cost that remains the real crux of the situation. The only way to reduce that would be by the formation of a "Union to resist Unions," and a refusal to undertake *any* building operations until the more expensive grades of labor were forced again to give an adequate day's work for a fair day's pay.

To obtain good housing at low cost the utmost benefits from coöperative buying of land and materials in large

quantities are necessary. Economical building has to be undertaken on a large scale, by building groups of at least a hundred houses at a time, with all detailed parts as consistently standardized as possible. The land must be secured in large areas, and laid out to obtain the utmost advantage from its natural resources. Unnecessary luxuries must be eliminated; planning must be skilful, looking toward economical construction; stock lengths of lumber and materials must be used; the arrangements of baths and plumbing must be judicious—in short, there must be the thoughtful consideration of all those elements that the skilled designer always regards in planning economically and well.

Furthermore, it must by now be apparent that Government assistance, National, State or Municipal, in the financing of such large projects is essential to their ultimate success. Are we prepared to accept and work for this conclusion now? Or shall we be forced into it too late? The next few years will tell.

— The — ENGLISH PARISH CHURCH AND ITS DETAILS

By
Robert M Blackall

Measured Drawings and Photographs by the Author

CHURCH OF ST. MICHAEL'S AT SOPLEY

The Church of St. Michael's at Sopley is planned for a larger number of people than could usually be taken care of by a single nave and apse. Although aisles have been added, they are only six feet wide and are not really to increase the seating capacity, but are more structural aisles, probably built at the same time as the nave. In this church, to get the increased seating capacity, wings similar to transepts have been placed, allowing more seats than the narrow aisles afforded. While in plan the transepts appear structural, in actuality there is no crossing in the nave, as it runs continuous from the apse arch to the rear. It is only when one is in the front of the church that one becomes cognizant of the transepts. The section shows the plain wooden roof supported by a king post truss, and sloping roof over the aisles.

CHURCH AT SWALCLIFFE, OXFORDSHIRE

Like the church at Sopley, that at Swalcliffe has three aisles, being planned for a larger number of people than could be accommodated in the single nave and single aisle. It marks the third development in plan from the simple nave. It gives a balanced plan, and is the type more commonly used in America for a small church. It is interesting to note that the tower has been made an integral part of the church by being placed somewhat inside the interior and not simply attached at the end. In cross section the church again is thoroughly English. Relatively flat roofs, with parapets, as strongly contrasted to the English church with steep

roofs—this may be called the simplest of the single apse three aisle churches. It will seat approximately four hundred people.

THE CHURCH AT FORDINGBRIDGE, HAMPSHIRE

The church at Fordingbridge, Hampshire, in sharp contrast to that at Sopley, is plainly a growth. Perhaps the aisles and the central apse were built at the same time, but not only has the tower been placed in a peculiar location, being in the left aisle, but the second apse has been added to form a small chapel. This marks the step from a one apse, three aisle church to a three apse, three aisle church. It is interesting to note, also, that the tower, which usually is placed at the end of the church on the main axis, is built in the centre on one side. A rare feature are the two porches, one on each side and another addition are the rooms for the clergy, at the right of the main aisle.

In the sections we note there is no structural connection in placing the trusses to center over the piers, but they have been spaced evenly, regardless of the location of the piers. In the cross section the roof has a decided pitch, and not the usual flat surface as is seen in the aisles. Over the central apse is a beautiful arch braced rafter ceiling, similar to the hull of a ship. This does not seem unusual, as Fordingbridge is close to the sea, and like the little church in Hingham, Mass., was perhaps built by shipbuilders.

The roof of the left aisle, a photograph of which appears at the end of this series, is a beautiful example of carved hammer beam trusses. The seating capacity of this church is approximately 350.



SCALE IN FEET
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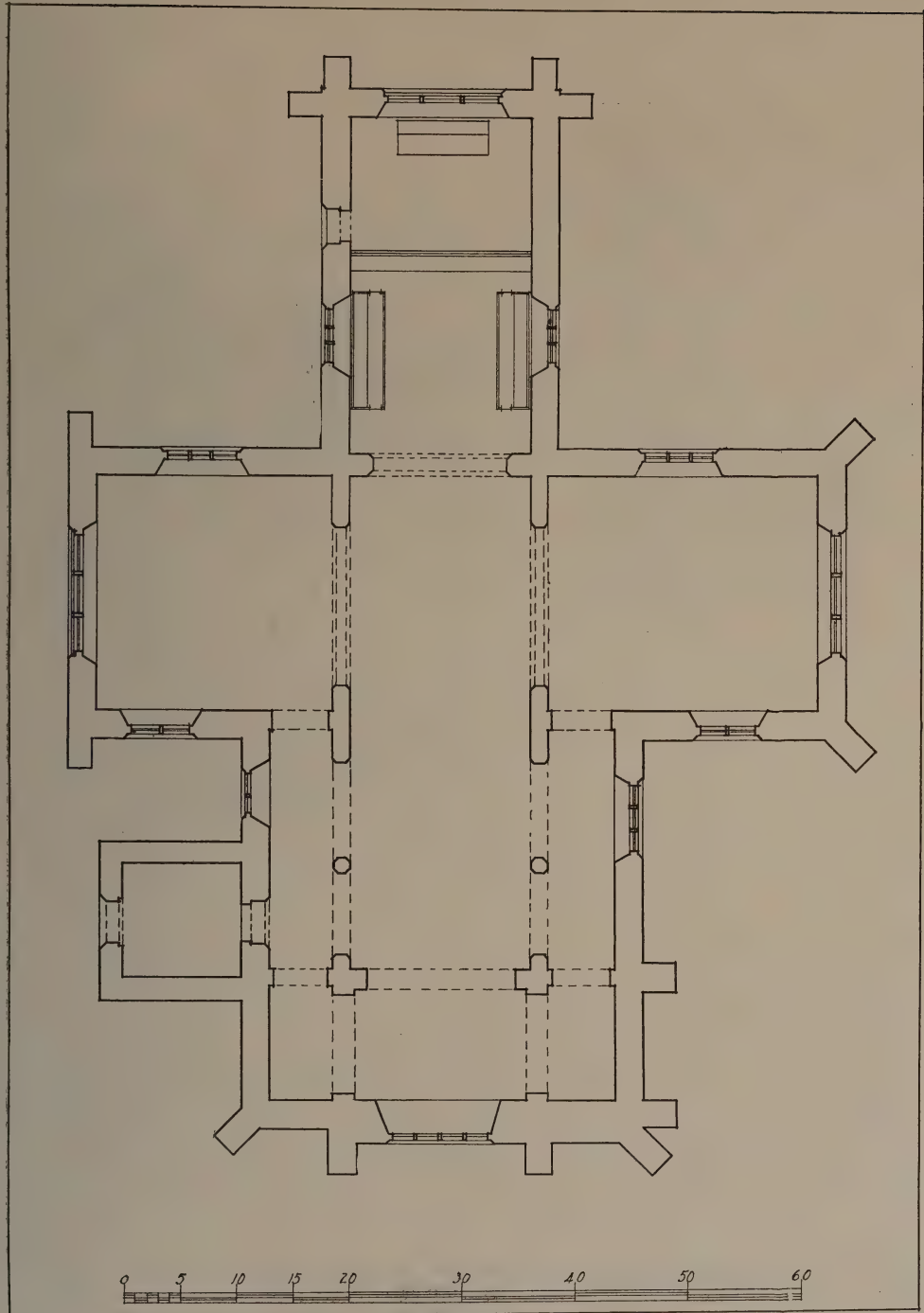
SECTION - THROUGH - NAVE

The Architectural Record

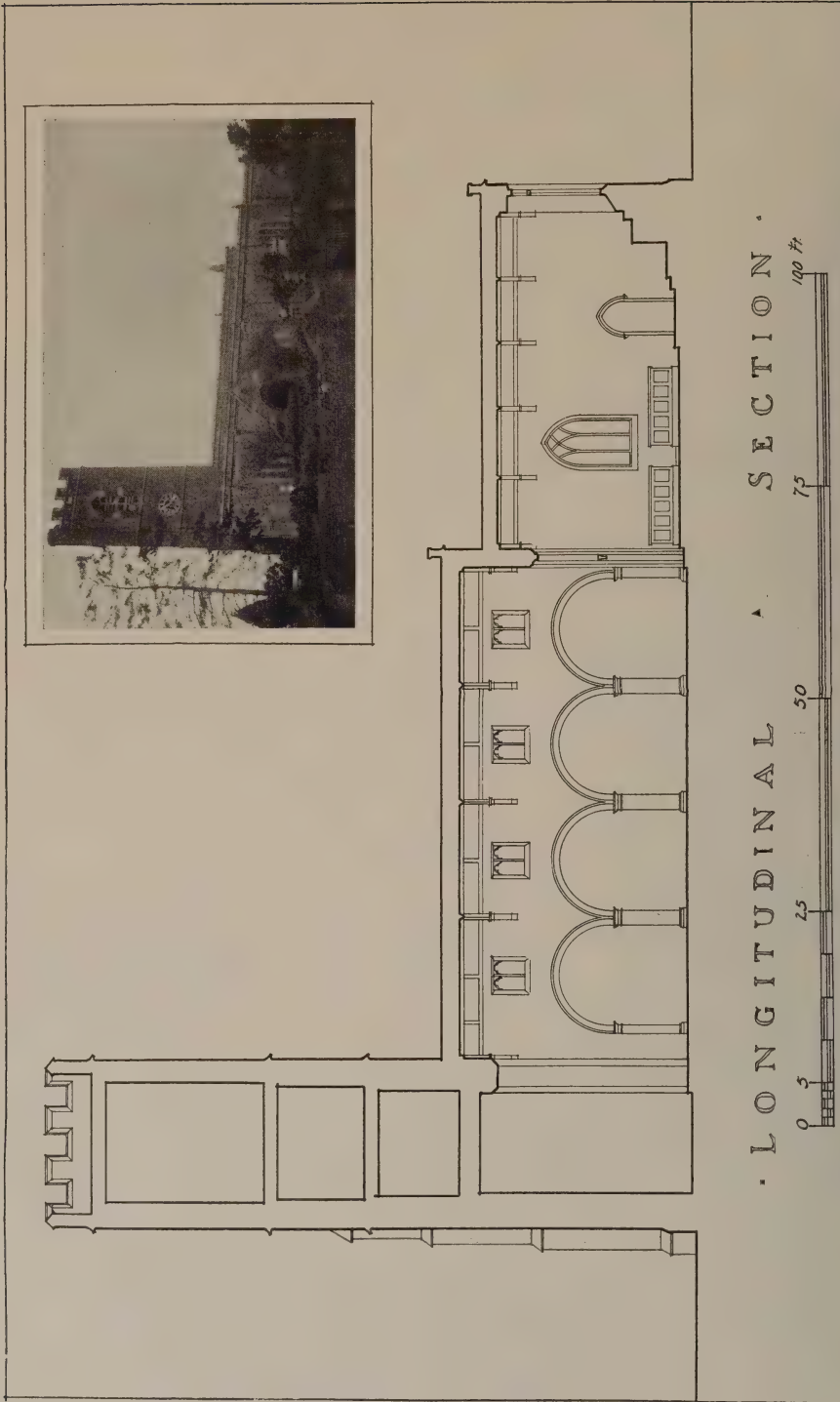
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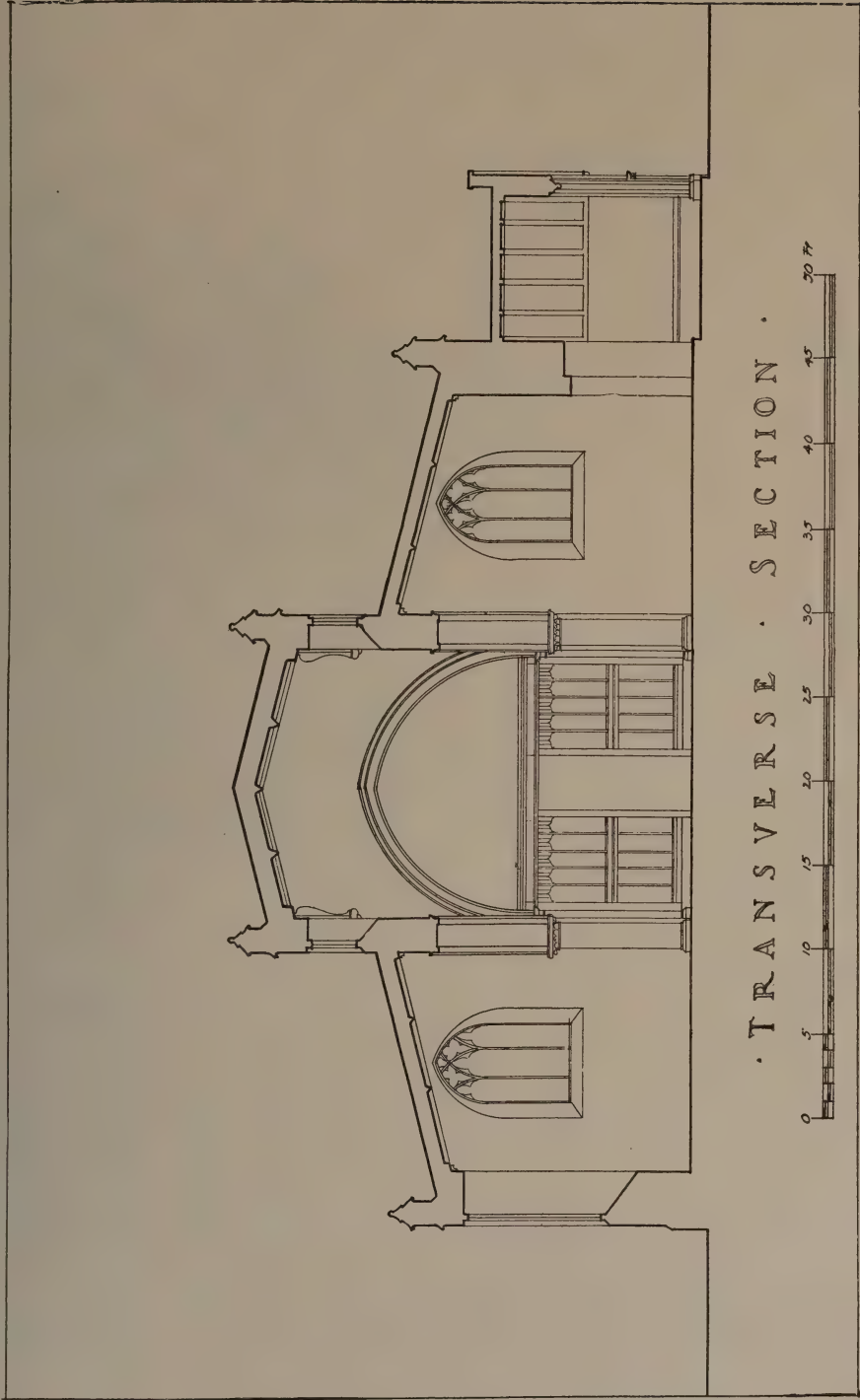
CHURCH OF SAINT MICHAEL'S AT SOPLEY, HAMPSHIRE

Photograph and Drawing by Robert M. Blackall



Floor Plan
CHURCH OF SAINT MICHAEL'S AT SOPLEY, HAMPSHIRE
Measured and Drawn by Robert M. Blackall

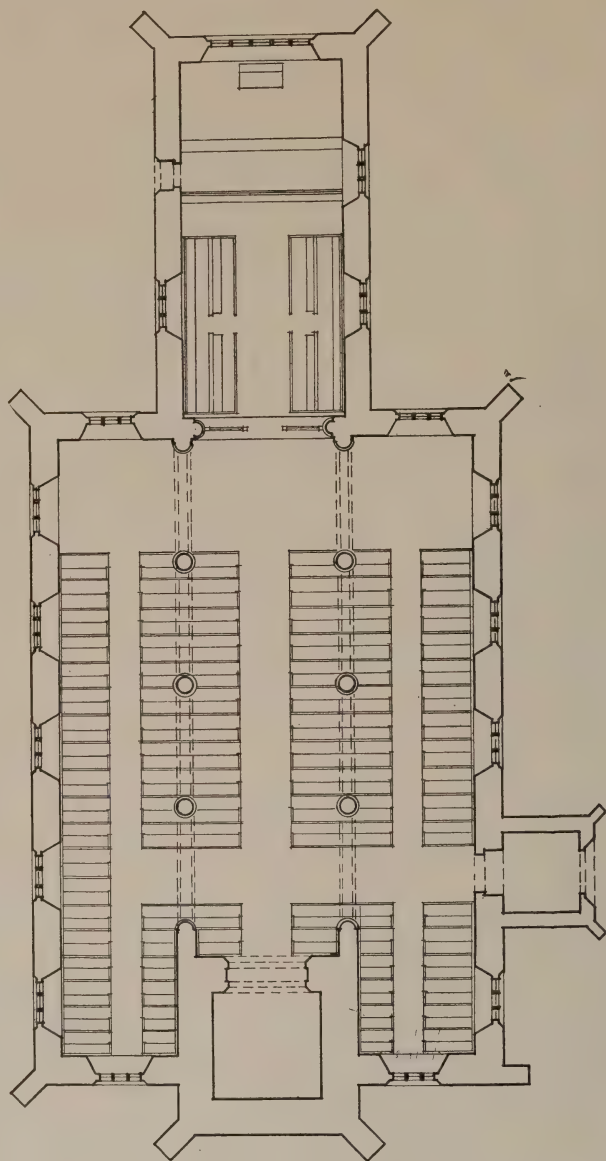




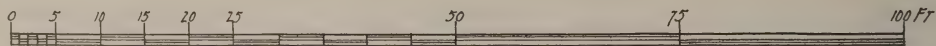
The Architectural Record

CHURCH AT SWALCLIFFE, OXFORDSHIRE
Measured and Drawn by Robert M. Blackall

January, 1925

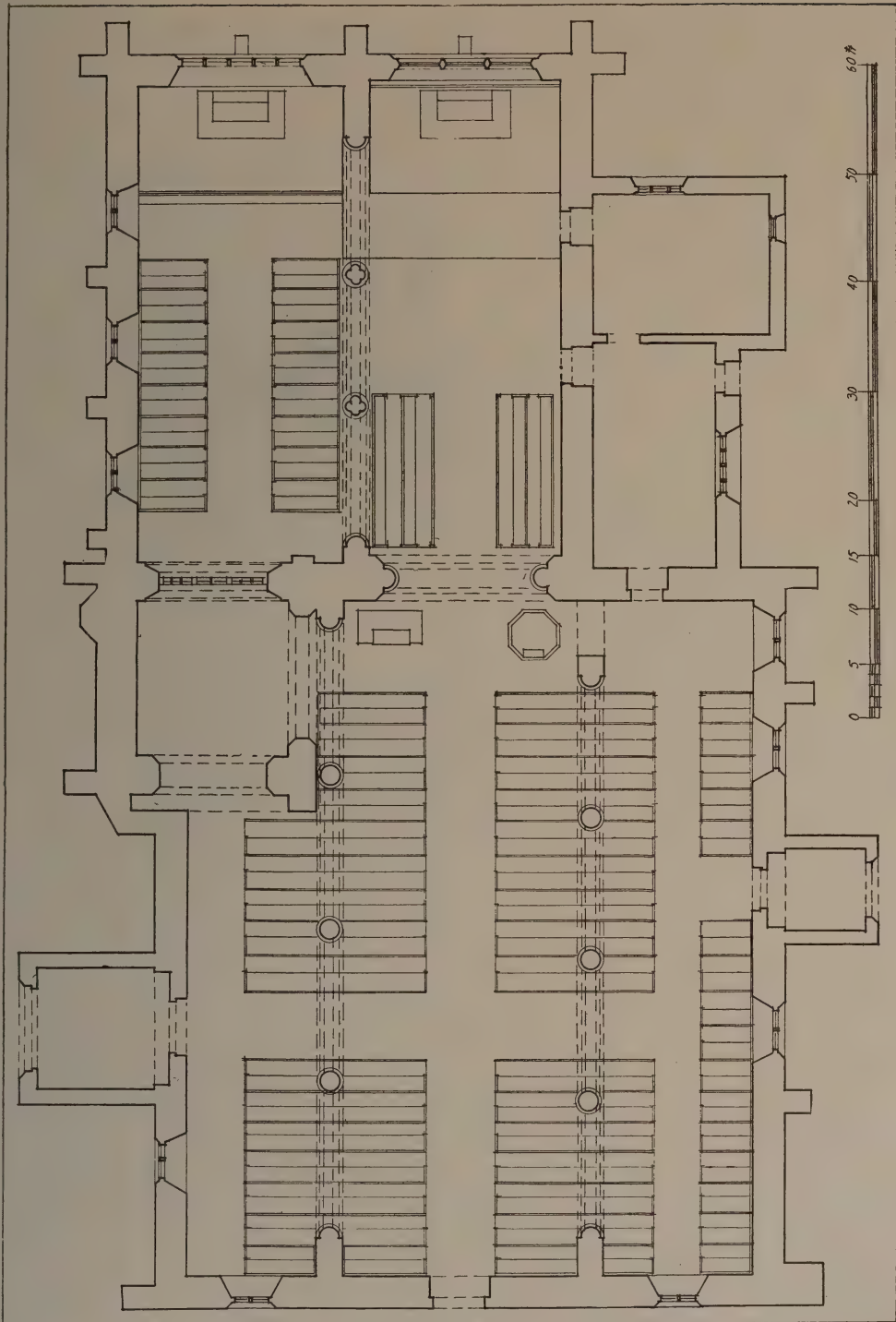


PLAN



CHURCH AT SWALCLIFFE, OXFORDSHIRE

Measured and Drawn by Robert M. Blackall



CHURCH AT FORDINGBRIDGE, HAMPSHIRE

Measured and Drawn by Robert M. Blackall

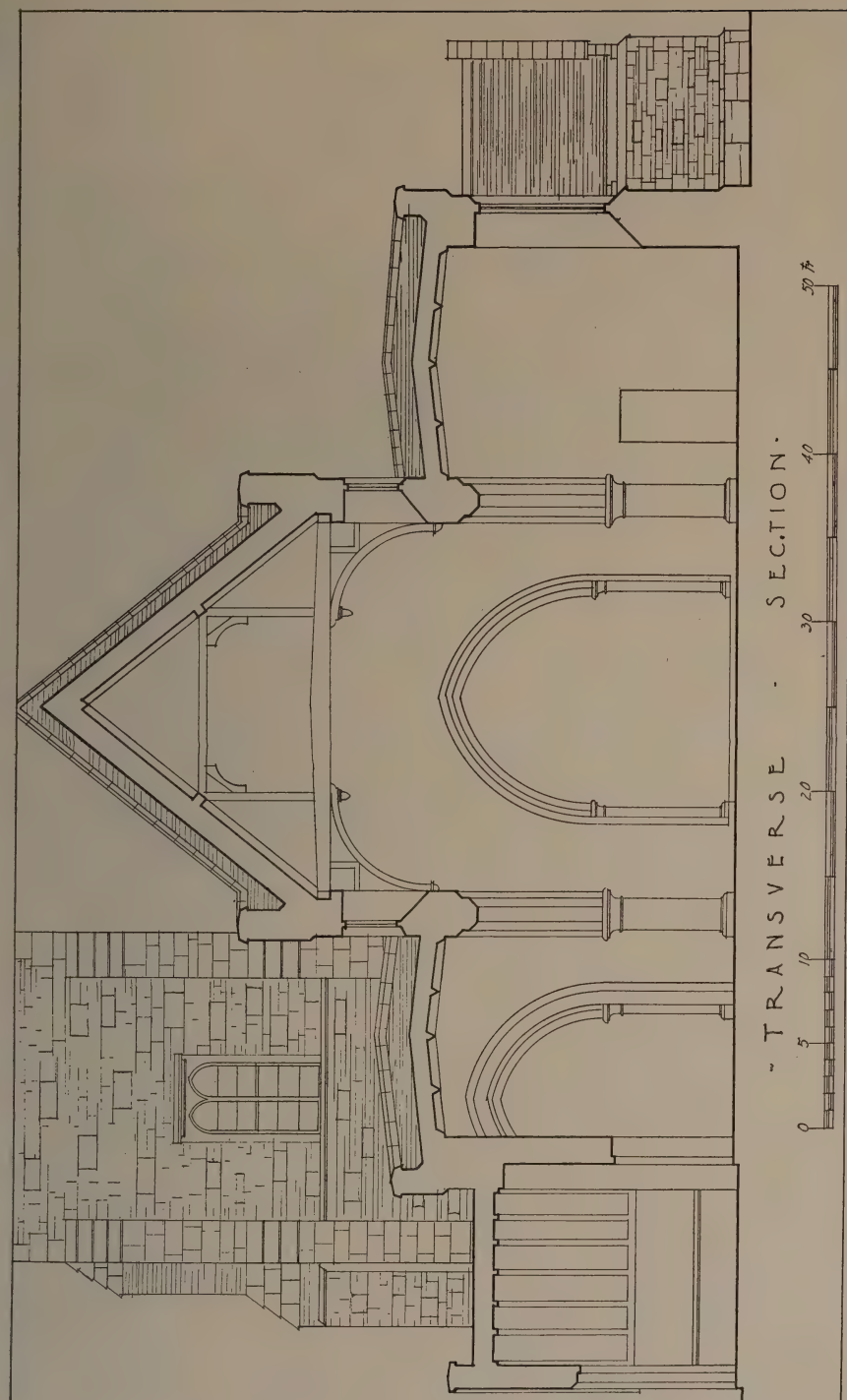


January, 1925

CHURCH AT FORDINGBRIDGE, HAMPSHIRE

Photograph by Robert M. Blackall

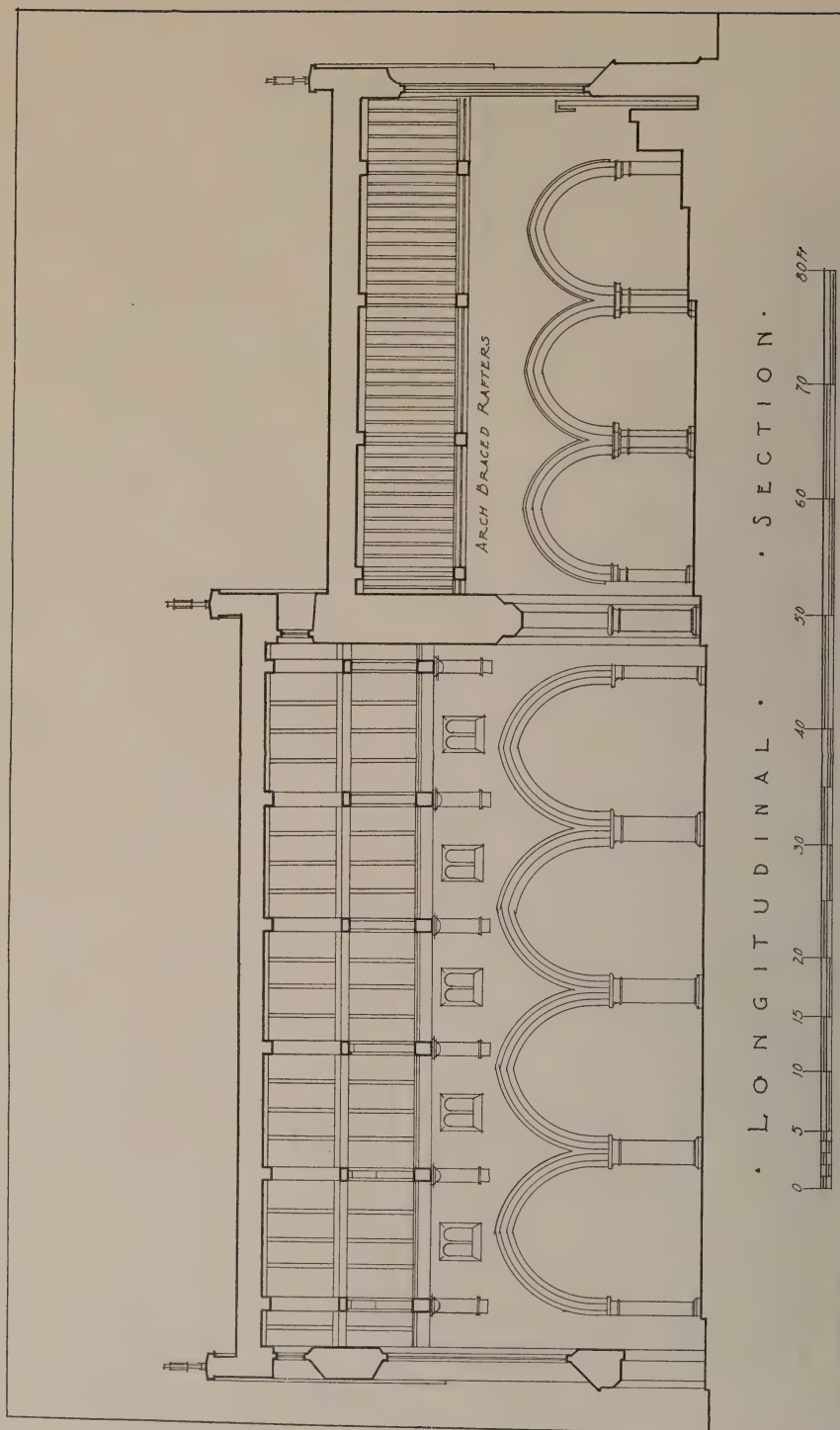
The Architectural Record



The Architectural Record

CHURCH AT FORDINGBRIDGE, HAMPSHIRE
Measured and Drawn by Robert M. Blackall

January, 1925



CHURCH AT FORDINGBRIDGE, HAMPSHIRE
Measured and Drawn by Robert M. Blackall

THE BUILDING OUTLOOK FOR 1925

By WILLFORD I. KING, PH.D.

THE YEAR 1924 has proved a puzzle to forecasters, for some of the tried and trusted curves that are almost counted on to foretell the future have gone sadly astray. There is no doubt, on the other hand, that a number of the indicators of business conditions have run true to form. For example, the curve showing the value of factory production could scarcely have fit in better with the normal forty-months cycle had it been made to order. The activities of the mines and railways have oscillated almost in unison with the changes in factory output. Factory employment naturally has shown fluctuations similar to those of factory production. Wholesale price indices have likewise moved in sympathy. Most of the curves purporting to show general business conditions, being dominated by the items just enumerated, have given a picture corresponding to our idea of a strictly orthodox cycle.

But there is a fly in every ointment, and the intruder troubling the forecaster in this case is the erratic behavior of the security markets and also of the various factors pertaining to the construction industry. The normal thing is for stock prices, accompanied by the building curve, to attain their highest level a few months preceding the time when manufacturing, mining, and railroading are at the crest of the wave. Chart I shows us that, in the present instance, the volume of building contracts let reached an unusually high pinnacle at the beginning of 1924. This would lead us to expect great activity in manufacturing and the allied fields in the summer of 1924. Strangely enough, this is almost exactly the reverse of the truth, for that date represents the lowest point yet attained in the recent depression. One cannot well accuse the factories of misbehavior, for, as before stated, they have adhered closely to the orthodox forty-months cycle. It is the building industry that has been recalcitrant and has ignored its time schedule.

This departure makes it extremely difficult to guess what is going to happen, for who can tell whether this erratic movement is transitory and will be followed by a prompt return to the normal course, or whether, instead, it indicates that some new, unmeasured, and precedent-breaking force has entered the field with the intention of remaining indefinitely? Under such circumstances, is it worth while even to consider making a forecast for 1925? That is hard to say. It may be of interest to turn back to my article in *THE ARCHITECTURAL RECORD* for January, 1924, and see how well or how badly the guesses made at that time have turned out.

In that article, I expressed the opinion that interest rates had nearly reached a peak and that they would be falling during the latter part of 1924. Chart I shows that, as a matter of fact, they were at their highest point at about the time the article was written and that they have been falling consistently ever since.

In regard to the general business outlook, I expressed my views thus: "The depression of 1924 promises, then, to be mild in comparison to the terrific smash of 1920-21." At present, this prediction seems to have been accurately fulfilled.

Further on, I said, "If the construction deficit is to be made up soon, it would appear not unlikely that, even in 1924, building might remain active. The chances are, however, that part of the deficit will remain, either permanently or for a considerable time." As a matter of fact, Chart III shows that 1924 has been the first year in which any headway has been made in eliminating the building deficit accumulated during the war and immediately thereafter. Even now, we are by no means sure that this deficit will ever be made up. Last year's article puts the matter this way: "In the great cities, rents and construction costs have both increased somewhat more than the prices of other commodities and the incomes of tenants have not proved equal

ESTIMATED VOLUME OF CONSTRUCTION IN THE CONTINENTAL
UNITED STATES AS COMPARED TO THE ESTIMATED CUSTOMARY
REQUIREMENTS FOR NEW AND OLD POPULATION
1902-1924, Inclusive

| A | B | C | D | E | F | G | H | I | J |
|-----------|--|--|--|---|--|--|---|---|--|
| Year | Money Cost of Buildings (Millions of Current Dollars) | Index of Con- struction Costs | Cost of Buildings at Prices of 1913 (Millions) $B \div C$ | Improve- ments Demanded by Existing Population (Millions of 1913 Dollars) ^a | Improve- ments for Additional Population (Millions) $D - E$ | Increase in Population (Thousands) | Construction per Person Added to Population (Prices of 1913) $F \div G$ | Customary Construction in Millions at Prices of 1913 For Additional Population ^b | Construction in Millions at Prices of 1913 For All Purposes $E + I$ |
| 1902..... | \$1,513 | .729 | \$2,075 | \$671 | \$1,404 | 1,452 | \$967 | \$1,729 | \$2,400 |
| 1903..... | 1,632 | .807 | 2,023 | 688 | 1,335 | 1,467 | 909 | 1,747 | 2,435 |
| 1904..... | 1,893 | .794 | 2,384 | 700 | 1,684 | 1,474 | 1,142 | 1,755 | 2,455 |
| 1905..... | 2,603 | .831 | 3,132 | 714 | 2,418 | 1,752 | 1,380 | 2,087 | 2,801 |
| 1906..... | 2,743 | .905 | 3,030 | 731 | 2,299 | 2,077 | 1,107 | 2,474 | 3,205 |
| 1907..... | 2,527 | .951 | 2,657 | 749 | 1,908 | 1,846 | 1,033 | 2,198 | 2,947 |
| 1908..... | 2,214 | .914 | 2,422 | 761 | 1,661 | 1,356 | 1,225 | 1,615 | 2,376 |
| 1909..... | 3,026 | .934 | 3,240 | 778 | 2,462 | 2,173 | 1,133 | 2,588 | 3,366 |
| 1910..... | 2,905 | .964 | 3,014 | 794 | 2,220 | 1,635 | 1,358 | 1,947 | 2,741 |
| 1911..... | 2,829 | .970 | 2,917 | 806 | 2,111 | 1,293 | 1,632 | 1,540 | 2,346 |
| 1912..... | 3,009 | .981 | 3,068 | 819 | 2,249 | 1,686 | 1,334 | 2,008 | 2,827 |
| 1913..... | 2,805 | 1.000 | 2,805 | 834 | 1,971 | 2,069 | 952 | 2,464 | 3,298 |
| 1914..... | 2,606 | .968 | 2,693 | 850 | 1,843 | 1,497 | 1,230 | 1,783 | 2,633 |
| 1915..... | 2,651 | .984 | 2,694 | 862 | 1,832 | 1,345 | 1,362 | 1,602 | 2,464 |
| 1916..... | 3,275 | 1.168 | 2,804 | 874 | 1,930 | 1,535 | 1,257 | 1,828 | 2,702 |
| 1917..... | 2,754 | 1.440 | 1,912 | 887 | 1,025 | 1,262 | 812 | 1,503 | 2,390 |
| 1918..... | 2,349 | 1.604 | 1,464 | 897 | 567 | 672 | 845 | 800 | 1,697 |
| 1919..... | 3,893 | 1.896 | 2,053 | 902 | 1,151 | 1,186 | 970 | 1,413 | 2,315 |
| 1920..... | 3,775 | 2.430 | 1,553 | 914 | 639 | 1,701 | 376 | 2,026 | 2,940 |
| 1921..... | 3,107 | 1.749 | 1,777 | 931 | 846 | 1,723 | 491 | 2,052 | 2,983 |
| 1922..... | 4,798 | 1.704 | 2,816 | 943 | 1,873 | 1,585 | 1,182 | 1,888 | 2,831 |
| 1923..... | 5,306 | 1.890 | 2,807 | 958 | 1,849 | 1,943 | 952 | 2,314 | 3,272 |
| 1924..... | 5,900 ^c | 1.870 ^c | 3,155 ^c | 974 | 2,181 ^c | 1,560 ^c | 1,398 ^c | 1,858 | 2,832 |
| Total | | | 58,495 | | | | | Total | 62,256 |

^aAverage Population multiplied by \$8.59.^bIncrease in Population multiplied by \$1,191.00.^cRough preliminary estimate.

to the added strain. People have become injured to a greater degree of crowding."

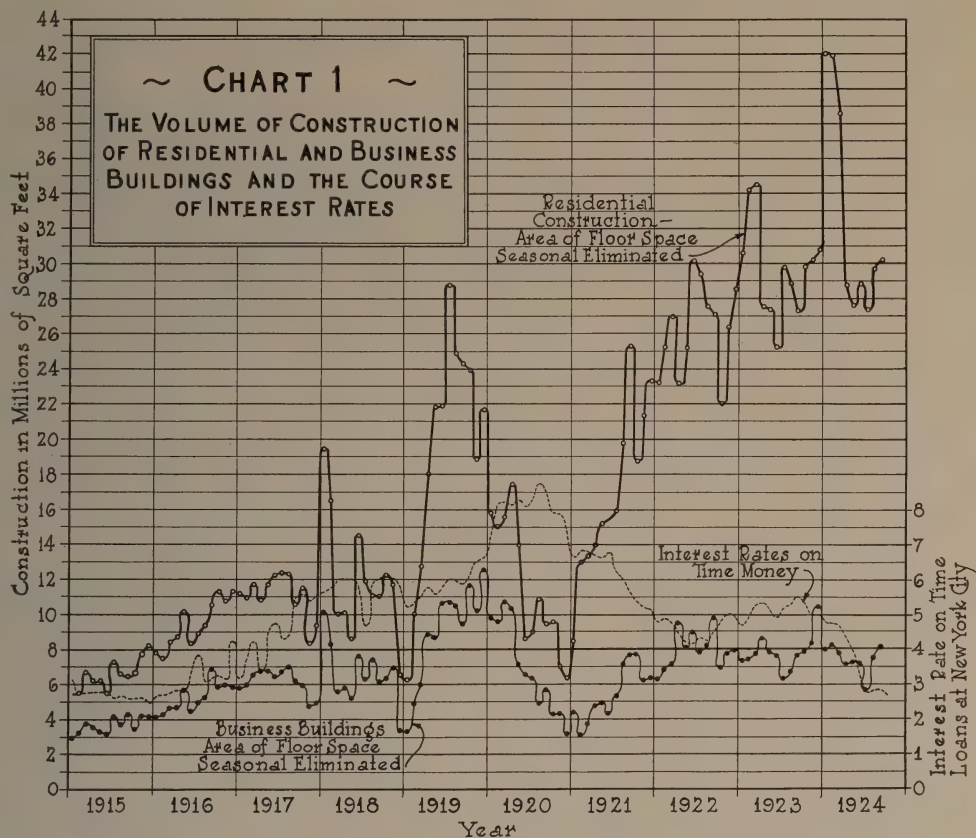
In last year's forecast, I stated that it seemed improbable that the rally in building construction occurring in the autumn would long continue. As a matter of fact, business building continued upward only until December, but residence building held out for two months longer before beginning an abrupt decline.

When one considers the number of important forces involved and the difficulty of measuring the intensity of each, he must conclude that the 1924 forecast came as close to complete fulfilment as one can ordinarily expect. Could we foretell

what is going to happen next year with the same degree of accuracy that we describe the occurrences of last year, it is quite certain that business would be a very different thing from what it is today. With uncertainty removed, risk would be eliminated or reduced to a minimum and profits would be much more secure than at present. However, we cannot be sure that this could be considered entirely a net gain. Were there no risk, business would be a tame affair, and presumably competition for every penny would be so keen that profits would be meagre at best. At present, the man who is most adept at the art of

guessing is rewarded by a major share of the spoils. The most skillful guesser is the one who makes the best use of the experiences of the past. All that the statistician can do for the business man is to broaden his knowledge of the way different factors have been related in previous years. The wider the scope of

volume of residential building, while the lower curve shows the number of contracts let for business buildings. The normal seasonal fluctuation has been eliminated by means of the new method described by the present writer in the Journal of the American Statistical Association for September, 1924. As stated in



such knowledge, the more likely is one to anticipate just what events and conditions will actually occur. The only sensible procedure, then, for one who wishes to make a forecast of what is going to happen in 1925, is to begin by studying the fundamental influences as they now exist. A few of these are portrayed in the accompanying table and charts.

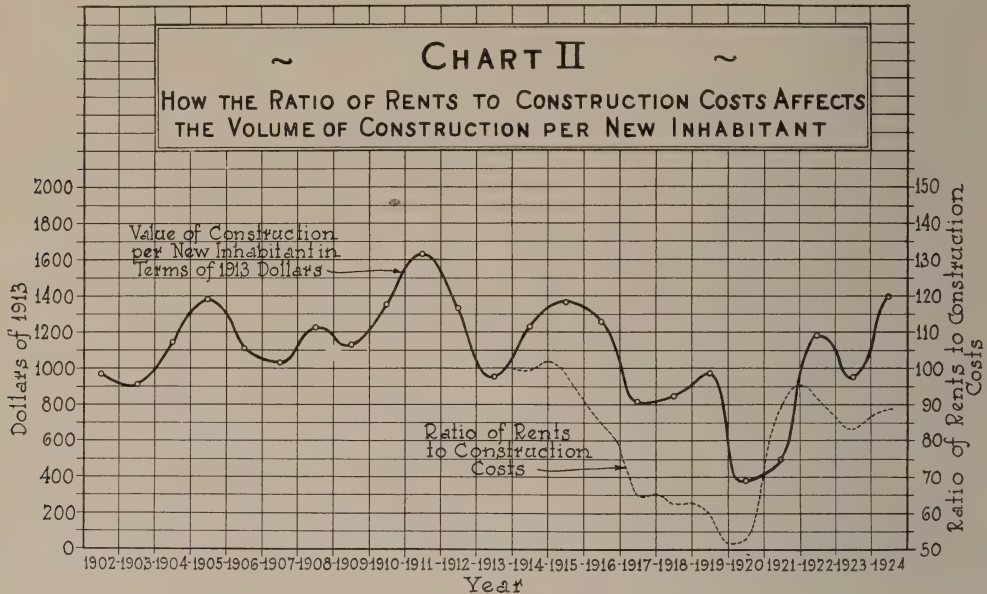
Chart I presents a picture of the movements in the number of square feet of building space contracted for, as shown by the records of the F. W. Dodge Corporation. The upper curve records the

volume of residential building, while the lower curve shows the number of contracts let for business buildings. The normal seasonal fluctuation has been eliminated by means of the new method described by the present writer in the Journal of the American Statistical Association for September, 1924. As stated in

that article, it is impossible to eliminate the actual seasonal fluctuations in the given month. The best that can be done is to get rid of the normal variations. It is possible, therefore, that some of the minor oscillations shown in the curve in Chart I represent residuals of seasonal movements, but the chances are that most of the fluctuations of any size are really cyclical.

points do not necessarily occur in the same month. Thus, we see that residential construction reached an exceptionally high point in the first two months of 1924, while business construction was at a peak in December of 1923. Had the volume of construction lived up to its common reputation by forecasting business conditions, we would doubtless have found business attaining a high point in

the brink before taking a serious downward plunge. We have seen what the facts are. If we can find a reason for the anomalies that have occurred, we may be in a better position to forecast the future. How are the occurrences of 1924 to be explained? Why did the 1924 building record run above normal at the same time that the great organized industries were seriously depressed?



the Spring of 1924. As a matter of fact, a number of the business indicators do show a distinct hump about February, 1924, but this temporary rise was quickly turned into a decline which continued at a rapid rate until June, at which date industry was far below normal.

The volume of construction, as measured by the number of square feet covered by contracts, declined sharply between February and May, but it did not fall far enough to bring the volume down even to normal. Since July, there has been a distinct recovery, both in residential and business construction, and most of the business indicators have also risen materially. The question of interest to architects and builders is whether this upward tendency is to continue throughout 1925, or whether we are hesitating on

In an article appearing in the American Contractor of April 28, 1923, I pointed out that the volume of building appears to be affected materially by the loan market. Chart I, here presented, contains curves similar to those upon which the conclusion just mentioned was based. The dotted line represents the rate of interest on "time money" at New York City. While, it is true, loans of this type are not made for building purposes, the fact remains that the two classes of interest rates are so closely related that the movement of the curves here given reflects the state of the market for building loans with a reasonable degree of precision. Although the correlations are by no means close, doubtless because this is only one of the casual factors at work, there seems, nevertheless, to be a distinct

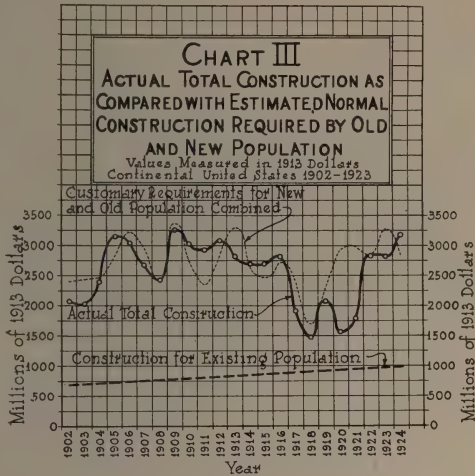
tendency for "easy money" to stimulate building and for "tight money" to put a damper on construction. The reasons for this are so simple as to be apparent to every builder. Since September, 1923, interest rates have been declining steadily along a steep gradient, with the result

movements of the curve representing the ratio of the house rents to construction costs tend to precede somewhat the corresponding movements in the volume of construction per new inhabitant. In general, however, we see that the long decline from 1915 to 1920 in the rent-construction ratio was accompanied by a similar falling-off in the volume of construction per new inhabitant added to the population. Since 1920, the ratio of house rents to construction costs has tended upward, and likewise the average value of building space constructed for each additional member of the population has increased. It appears, then, that this ratio of house rents to construction costs may have been a most important factor in forcing the construction of residential and business buildings to rise to such an unusual altitude in the early part of 1924.

Chart III has been constructed on the assumption that the pre-war volume of construction represents the normal plane to which we may well be expected to return when the effects of the war and the financial disturbance accompanying it have disappeared. Perhaps this assumption is contrary to fact. Perhaps we shall normally build less in the future than in the past. Perhaps, on the other hand, the reverse may be the case.

On the basis of the figures shown in the accompanying table, it appears that, in pre-war times, measured in terms of 1913 dollars, the average inhabitant already in the United States called for only \$8.59 worth of new buildings per year, while, for every person added to the population, additional construction to the extent of \$1,191.00 was demanded. It is, then, easy to see that the great bulk of the construction work of the country is required to supply the needs of the newcomers and that the rate of growth of the population is a major factor in determining the amount of new construction that will be undertaken.

Clearly, interest rates are low in comparison to what they have been in recent years. In fact, they are lower than at any time since 1915. There seems to be little question that, other things being equal, low interest rates stimulate building. From the point of view of the loan



that the rate charged on time money in New York is now only about half as high as it was in the autumn of 1923. This, then, is doubtless one of the forces that is tending to maintain residential construction at a high level.

Chart II introduces two other factors which have important influence on the construction industry—namely, house rents and construction costs. The dotted line indicates the ratio of The United States Bureau of Labor Statistics index of house rents to an index of construction costs. The heavy curve above gives us an estimate, taken from Column H of the accompanying table, of the volume of construction for each new inhabitant added to the population of the United States. The dotted line evidently tends to rise when rents go up or construction costs fall, and to decline when housing becomes cheaper or whenever it costs more to construct buildings of the average type. It goes without saying that, when house rents are low, the value of houses also tends to fall, and, when they are worth little, construction is discouraged. It is evident from the chart that the

market, therefore, 1925 should be a good year for the construction industry.

The curve recording the degree of activity prevailing in manufacturing, mining, and transportation is moving upward, and if it pursues its normal course, it will continue along a generally rising trend during the larger part of 1925. Activity in these lines means larger payments for wages and larger wage payments are commonly reflected in a stronger demand for homes. Furthermore, as industry expands, more factory buildings are likely to be necessary to take care of the growing business. The improving condition of the farmer is also likely to add something to the demand for buildings in 1925.

Chart III gives us a picture of the estimated total value of construction, as measured in terms of dollars having a purchasing power equal to that of 1913, in comparison to the customary amount of construction required to meet the needs of the population on the basis of their pre-war demands. As previously stated, the evidence is that, during recent years, the amount of construction per capita has been distinctly less than it was during the period preceding 1916. Should we decide to bring our building supply up to the pre-war level, it appears, from the figures given in Columns D and J of the accompanying table, that we should need to add buildings worth, on the 1913 basis, about $3\frac{3}{4}$ billions of dollars. If this figure is converted to dollars of present value, a deficit of 7 billions of dollars is indicated, or considerably more than the total value of the buildings erected in 1924. The existence of this deficit is always calculated to encourage the optimists, for they believe it is certain to be eliminated in the near future and that building must proceed at a rapid rate during the next few years.

In some other respects, however, the outlook for 1925 is not so roseate. For the first time since the latter part of 1922, the index of house rents prepared by the National Industrial Conference Board has ceased to rise and, in fact, has even shown a slight decline. Reports from different cities ranging all the way from New York to Los Angeles indicate an increase in the number of vacant houses and a distinctly slower movement

of real estate. Such conditions are certainly not calculated to inspire a great volume of residential building. Not infrequently, they have marked the beginning of a slump in that field of activity.

There is also another unfavorable factor that must be taken into account. As previously indicated, the bulk of new construction is called for by the needs of newcomers—by the demand arising from the accretions to the existing population—and therefore the rate of population growth largely dominates the volume of construction. Not long ago, Congress passed a new law intended further to restrict the flow of immigration to our shores. At present, the available records do not cover a period long enough to show just what the ultimate effect of this legislation will be, but the early figures indicate that it will, to some degree, lessen the rapidity of population growth. If so, this slowing up will doubtless have its counterpart in the construction industry, though the effect may not be visible as early as 1925.

But this is not all, for the pessimist has still another argument at his disposal. From the solid curve in Chart III, we see that the volume of construction in 1924 reached a distinctly high level, higher, in fact, than any other attained since 1909. The figures in Column H of the accompanying table show that, in 1911 alone, has the volume of construction per new inhabitant been as large as the preliminary estimates for 1924 indicate it to be for that year. There is no proverb more applicable to business than the old saying that "all that goes up must come down." Is not the present a case in point?

In view of the conflicting influences at work, it appears rash to make a positive forecast for 1925. In the field of residential construction, the unfavorable factors seem to outweigh somewhat the favorable ones. The outlook for industrial and public utility construction and for the erection of public buildings is more encouraging to the builder. If the total value of all buildings constructed in 1925 equals the figure for 1924, architects and contractors can certainly have no legitimate cause for complaint but they should, instead, feel that Fortune has been on their side.



A NEW DIMENSION IN ARCHITECTURAL EFFECTS

American architecture in its most conspicuous achievement, the skyscraper, has been the subject of much foolish complacency and much unintelligent abuse, but after years of essentially irrelevant criticism of this kind it has gradually triumphed over both its favorable and unfavorable critics. It continues to exhibit in an exaggerated form the faults of which it has been accused. It continues in most cases to employ inappropriate forms and obsolete conventions, and it continues to be barren of those balances, proportions and refinements, which characterized the successful architecture of the past. The skyscraper, compared to the temple, the church, the palace or any previous architectural type is a sheer monstrosity. But just because it is a monstrosity, it has already achieved results which are novel and exciting and which their designers frequently do not intend. Its sheer size and the relationship which by its size and height it establishes with the atmosphere, the horizon and with the whole vast luminous perspective of the sky have in a sense created a new dimension in architectural effects.

Americans, and New Yorkers in particular, tend to take for granted the unfamiliar and unearthly beauties which loom and shimmer about their skyscrapers, but occasionally foreigners visit New York who are more sensitive and alert to the spectacular and bewildering aspects of its tall buildings. One of them, Miss Rebecca West, the English novelist, describes the appearance of New York as at once the most exciting in the world and the most monotonous. "The skyscrapers," she says, "are making an astonishing revelation of new beauty to the English eye." "They have a magical beauty of material" in that "they offer so large a surface to the reflection of light and shade that they cease to represent the solid appearance of masonry and seem to be of a living substance like that of flowers."

Miss West remarks, of course, upon the increased opportunities which the architects of skyscrapers have obtained as the result of the Zoning Law. The necessity of setting back the upper stories of tall buildings has in her opinion "set the architect a problem which he has solved frequently with the most poetic invention." On Lexington Avenue there is a vast apartment house which rears its dark masses like the Pyramids and which like them is an example of "mystery-making" in stone. "On Forty-second Street there is an office building which with perfect simplicity of form, with nothing but deep grooving for its walls and clean cut spires, contrives to give the emotions of a Gothic cathedral. And on Madison Avenue is one of the sights of the world by reason of a certain building which story by story is shaped by an increasingly strange and rich fancy till on its heights it is transformed into an Arabian Nights' palace of domes and minarets. "On its architecture alone," says Miss West, "America can claim to be one of the greatest artistic nations in the world."

While agreeing in the main with these somewhat magnificent comments on the skyscrapers of New York, we must register a dissent from the strict accuracy of the last assertion. Great art is conscious and it is free; and the art of the American skyscraper is only semi-conscious and is not at all free. It is bound by practical necessities which, while they create, also severely circumscribe the opportunities of the architect. Take the Shelton on Lexington Avenue, for instance, which Miss West praises so highly and so deservedly. Its mass is overpowering and its height imposing from every point of view, but as it is seen from the distance up or down Lexington Avenue its silhouette is usually uninteresting and even stupid. The architect may well have foreseen what a commonplace form the outline of his towering structure would from many directions present to the far-seeing eye, but whether he foresaw it or not, he was not in a position to improve

its design. The guilty relation between the two sets of lines was given when it was decided to build a structure of a certain height upon a certain size plot. He could not make the silhouette of the building contribute positively to the effect of stupendous mass and its atmospheric mysteries without asking his employers for a larger site or a less economical relation of height to girth.

But the outline or the silhouette of these buildings, important as it is, is less important than their ability to reflect light and to absorb color. It is the opportunity which a skyscraper, standing free from the neighboring structures and seen from a distance, offers of placing solid luminous and colored masses into scenery provided by the atmosphere, the horizon and the arch of the heavens which is what the American architect has most to be thankful for, but up to date he has not taken much advantage of it. The beauties to which Miss West calls attention are only in part beauties of design. They are more frequently beauties of accident or necessity whichever you choose to call it. But the time will come when the upper stories of these buildings will be composed of materials or covered with a surface which will glow, flame and glisten rather than merely submit to the fluctuating magic of its surroundings. The gilded upper stories of the new American Radiator Building on 40th Street, although not particularly successful in itself, may give the New York reader some glimpse of what we mean. The gilding of these stories, crude as it is, suggests bewildering possibilities as to the future use of surfaces with colors, glows and lights in order to convert the high places of New York, as seen from distant streets, into a wonderland of elaborate, fanciful and vivid masses and patterns.

HERBERT CROLY

COMPETITIONS FOR AMERICAN ACADEMY IN ROME FELLOWSHIPS

The American Academy in Rome has announced its annual competitions for Fellowships in architecture, painting, sculpture, musical composition and classical studies. The awards will be made after competitions, which, in the case of the fine arts, are open to unmarried men who are citizens of the United States; in classical studies, to unmarried citizens, men or women. It should be noted that in painting, sculpture, and musical composition there is to be no formal competition involving the execution of work on prescribed subjects, but these Fellowships will be awarded by direct selection after a

thorough investigation of the artistic ability and personal qualifications of the candidates. Applicants are required to submit examples of their work and such other evidence as will assist the juries in making the selections.

For the Fellowship in painting, the stipend is provided by the Jacob H. Lazarus Fund of the Metropolitan Museum of Art of New York City, established by Mrs. Amelia B. Lazarus and Miss Emilie Lazarus. For each Fellowship in the fine arts the stipend is \$1,000 a year for three years; in classical studies there is a Fellowship for one year with a stipend of \$1,000 and a Fellowship paying \$1,000 a year for two years. All Fellows have opportunity for travel, and Fellows in musical composition, of whom an extra amount of travel is required in visiting the leading musical centers of Europe, receive an additional allowance of \$1,000 a year for traveling expenses. In the case of all Fellowships, residence and studio (or study) are provided free of charge at the Academy.

Entries will be received until March first. For circulars of information and application blanks, address Roscoe Guernsey, Executive Secretary, American Academy in Rome, 101 Park Avenue, New York City.

THE WORK OF EDGAR BRANDT

A WELCOME DEPARTURE FROM CONVENTION IN THE IRON-WORKERS' CRAFT

The iron-workers' craft, in this country, has travelled for some time in the rut of the stylistic convention due probably to the necessity for conforming to the historic requirements of the architects. We begin to realize that excellently executed modern examples of Italian and Spanish Renaissance wrought-iron, are about to pall through surfeit; that surprise has exhausted itself which we first experienced, at finding that the spirit of that period could be recuscitated, and its technique equalled by Yellin and others. There is no craft associated with our architecture that has achieved such general excellence as wrought-iron work, but evidence of spontaneity in the concept of form and its distribution in design are astonishingly lacking in view of its high degree of technical achievement. With the growing tendency towards more independent expression in architectural design, it is necessary that the architect keep in touch with those craftsmen who are capable of thinking along parallel lines; hitherto the trouble has been that, when freedom of thought has been indulged by the craftsman, he has been so oblivious of architectonic requirements, that the consider-



WROUGHT IRON GATE WITH FIGURES IN GILDED IRON

ation of his work for architectural incorporation has been out of the question. A recent exhibition of the wrought-iron work of Edgar Brandt* caused us to realise the imaginative deficiencies of the native efforts in that craft, and to expect that this excellent work will exert a salutary influence. We were greatly impressed by the originality in design which the exhibitor showed, which is the outcome of a healthy and normal mind, free from any effort to surprise the observer even in its most unusual demonstrations. Brandt's technique is of the highest order, rendered individual by unusual methods in the manipulation of substance, surface, and color in patine and finish; the manner in which gold is used to enhance the color of the iron is of the greatest interest. He has no hesitation in devising new ornamental forms which have evolved through his intimate knowledge of the capacity of his material for decorative pliability; these are so thoroughly suitable that surprise is felt they have never been developed before. Every form, texture, and manner of ornamental growth, is an exposition of the capacity of the material to become a precious substance in the hand of its artist. The feeling which

actuates these designs is essentially French, but it possesses a quality of virility which is rare in the decorative work of that nation at the present time. The artistic impulses re-



AN INTERESTING EXAMPLE OF NEW TECHNIQUE IN WROUGHT IRON

*Ferraonier d'Art, Paris.

sponsible for the evolution of ornamental form and arrangement are singularly complex; they appear to trace ancestry to the early work of Grasset and his confrères, but Brandt's work is entirely free from the overwhelming deficiency of ornamental composition (in the structural sense) of that school. It is particularly the power which he displays in the statement of ornamental growth which compels admiration, and places him in the class of the historic creators. There is evidently a sound acquaintance with the historic modes underlying his imaginative exuberance, which influences his arrangement of mass and contrivance of form, and renders his work a valuable adjunct to the more modern phases of American architecture.

LEON V. SOLON

REGIONAL ARCHITECTURE OF THE WEST OF ENGLAND

Of the new architectural books of the year, one of the most significant is *The Regional Architecture of the West of England*, by Professor A. E. Richardson, F.R.I.B.A., of University College, London, and his partner in practice, C. Lovett Gill, F.R.I.B.A., published by Ernest Benn, Ltd., London.

Although, as the title denotes, the volume is devoted to an analysis of architecture in only one part of England, Devonshire and Cornwall, the value and interest of its subject matter are by no means restricted within local bounds. While the historical appeal may primarily concern British readers, the book has so many other conspicuous aspects of general and present pertinence that it cannot fail to be genuinely useful to American architects and also to laymen who have an intelligent appreciation of architecture.

Of the ten chapters, one each is devoted to the City of Exeter, Princetown, the Isles of Scilly, and Plymouth considered together with Stonehouse and Devonport, while there are also chapters on the general characteristics of the Western Region, the development of regional tradition and the materials commonly employed, the Middle Period (1730-1780), the Late Period (1780-1810), and the Regency and Early Victorian Modes (1810-1850).

The illustrations deserve especial mention, both because of their quality and the manner in which they are presented, a combination that greatly enhances the utility of the volume.

There are 173 half-tone illustrations, of which a fair proportion are of full page size, with due attention to enlargements in order adequately to show detail and texture. There are also 39 small line cuts inserted in the text, made from hastily drawn pen and ink sketches. These sketches have the quality of catching, in the fewest possible lines, the essentials of composition and detail while completely omitting whatever is irrelevant. For this reason they constitute a convincing method of illustration, in welcome complement to the half-tones. The subjects include both domestic and civil architecture, the former being considerably preponderant; ecclesiastical architecture is not exemplified and is alluded to only here and there in the course of the text.

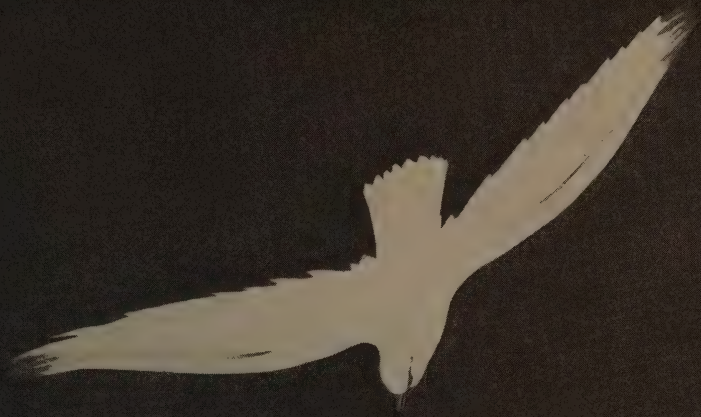
For a long period the authors have enjoyed unrivalled opportunity to study their field at close range, while planning and superintending work for the Duchy of Cornwall. The book, therefore, is not a mere set of hastily gathered and somewhat detached impressions, but a comprehensive and faithful record of facts, critically analyzed and presented in a maturely considered and authoritative digest.

It will become apparent, upon perusal, that the major portion of illustrations and text bears upon the implanting and development of the Classic tradition in the West Country, and upon the vigorous and healthy local interpretation as affected by the assimilation of varied strains of influence and by their ingenious and often highly original adaptation to the individual requirements of the place and moment. Curiously enough, in this respect it is not only possible to trace but impossible to avoid seeing a process analogous to, and often closely resembling, what was going on in eighteenth century America. The same sort of resourcefulness and common-sense in adaptation were brought into play in both spheres, and a kinship in the outcome resulted.

Besides calling attention to the healthy vigor of the West Country tradition because it was so readily assimilative, the authors lay stress on the refreshing diversity of composition so successfully attained without doing violence to the spirit of traditional principles. In so doing they have put emphasis upon a much-needed lesson.

These two last-named features of the book invest it with special interest and suggestive value to the American architect.

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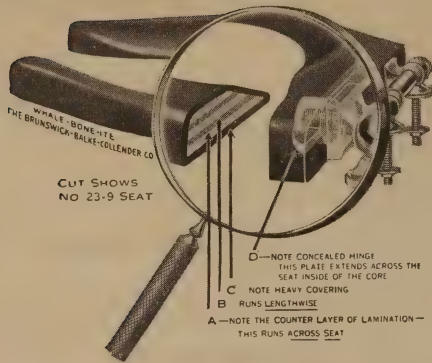
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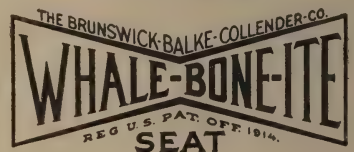
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The
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FEBRVARY 1925

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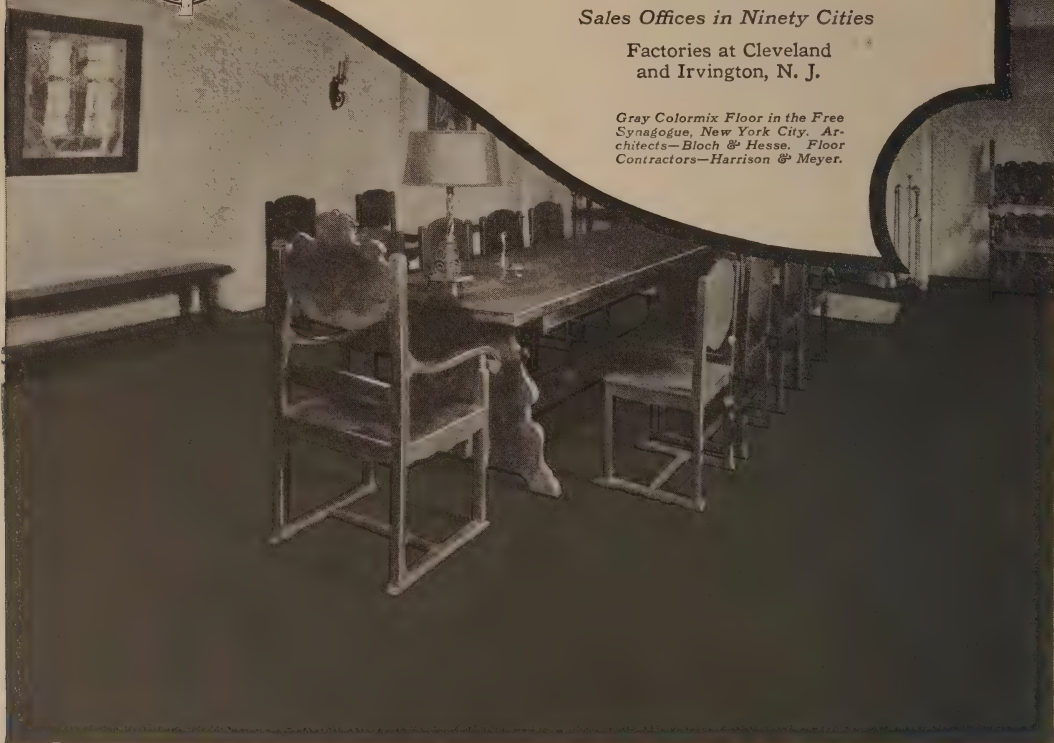


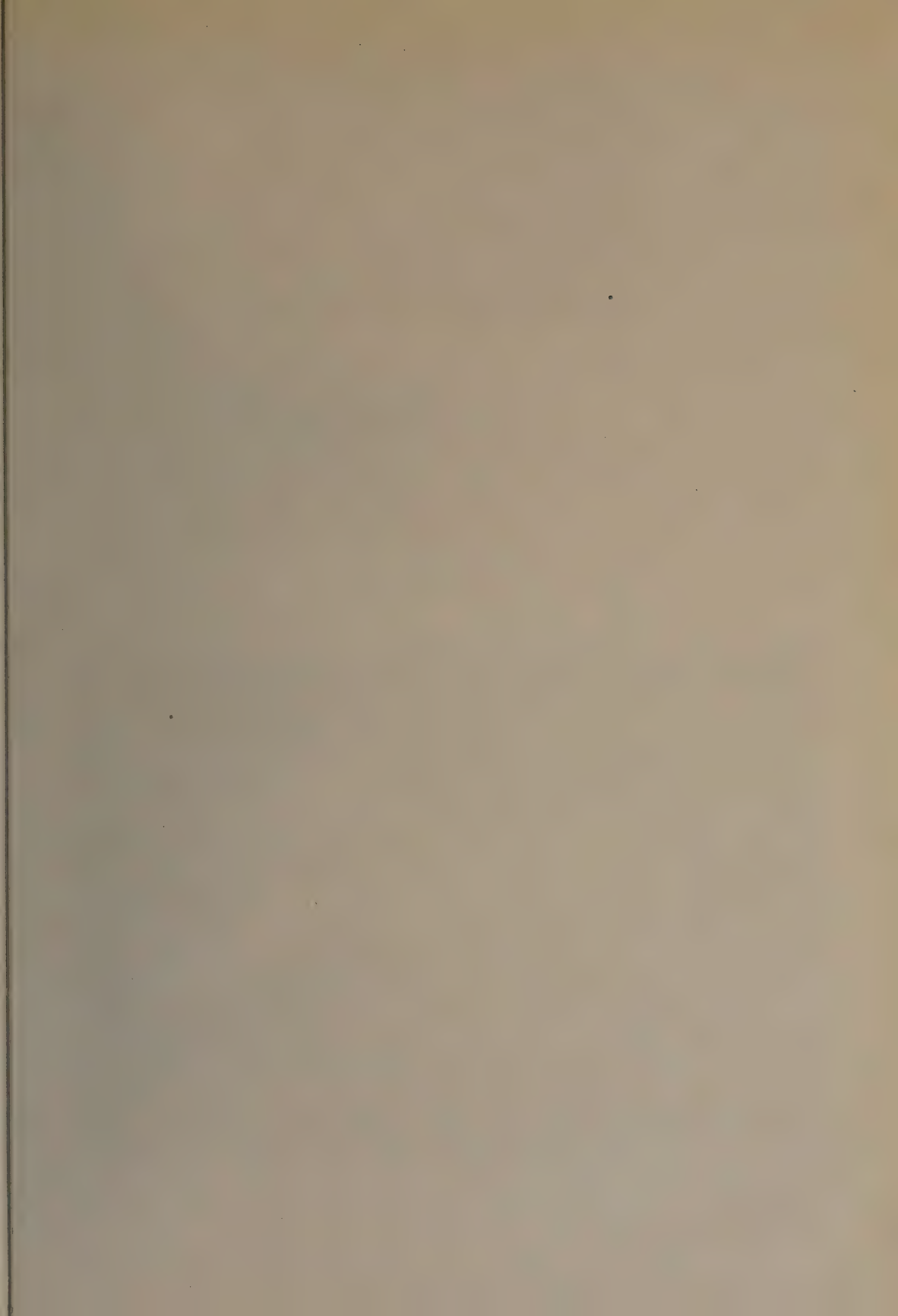
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Sculptor.



The ARCHITECTURAL RECORD

VOLUME 57

FEBRUARY, 1925

NUMBER 2

The WORK OF WILLIAM B. ITTNER FAIA

By
GUY STUDY

PERHAPS no type of building in the United States has been so completely revolutionized within the past two decades as the public school. Realizing the necessity of adjusting our schools to the demands of modern social and industrial life, communities have vied with each other to see their children housed in modern, fireproof structures, suited to the new curriculum and the diversified school uses of today. The present-day aims of the schools include the teaching of health first of all as the foundation for a strong and vigorous manhood and womanhood. Modern education must also include aside from the fundamental three R's, training for citizenship, for worthy home membership, for the proper and profitable use of leisure time, for ethics and finally for vocation.

We find then that the traditional school of our fore-fathers no longer fits modern needs and must give way to a school building planned to meet adequately the richer demands of the day. The enthusiasm with which the country has taken up the work of rebuilding its schools may be compared with the reli-

gious fervor that swept over Europe during the Middle Ages and gave to the world the great churches and cathedrals. Today one can scarcely find a city or town of any importance that within the last twenty-five years has not completely rebuilt its schools or has plans in the making to do so.

In this development of the modern school no architect has played a more prominent part than William B. Ittner. Early in the movement, Mr. Ittner began to study the problems of the modern school perhaps only by chance, for it would seem that his appointment when a young man as architect for the Board of Education of the City of St. Louis was more rare good fortune than otherwise. At that time some twenty-five years ago, St. Louis possessed only the commonplace and traditional schools of the average American city. The dreary looking, impoverished buildings were not only unsuited to the more modern educational process then developing, but were lacking in many instances in proper lighting, ventilation and sanitation. Correct lighting, and heating of school rooms



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February, 1925

MOUNT AUBURN SCHOOL, DALLAS, TEXAS
Wm. B. Ittner, Architect

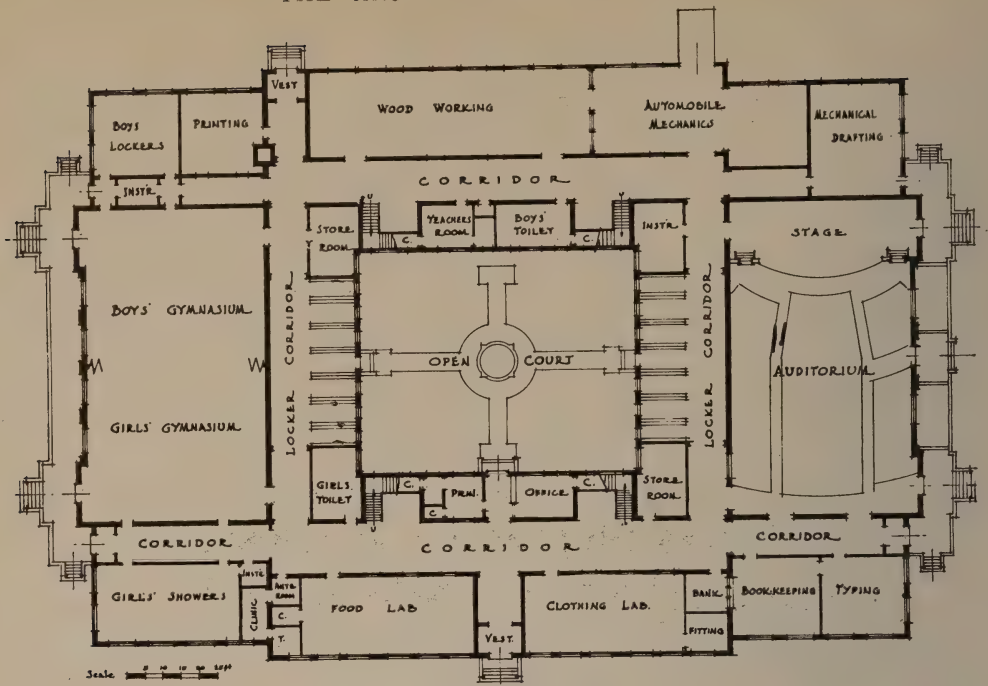


Entrance Detail
ROSE E. FANNING SCHOOL, ST. LOUIS, MISSOURI
Wm. B. Ittner, Architect

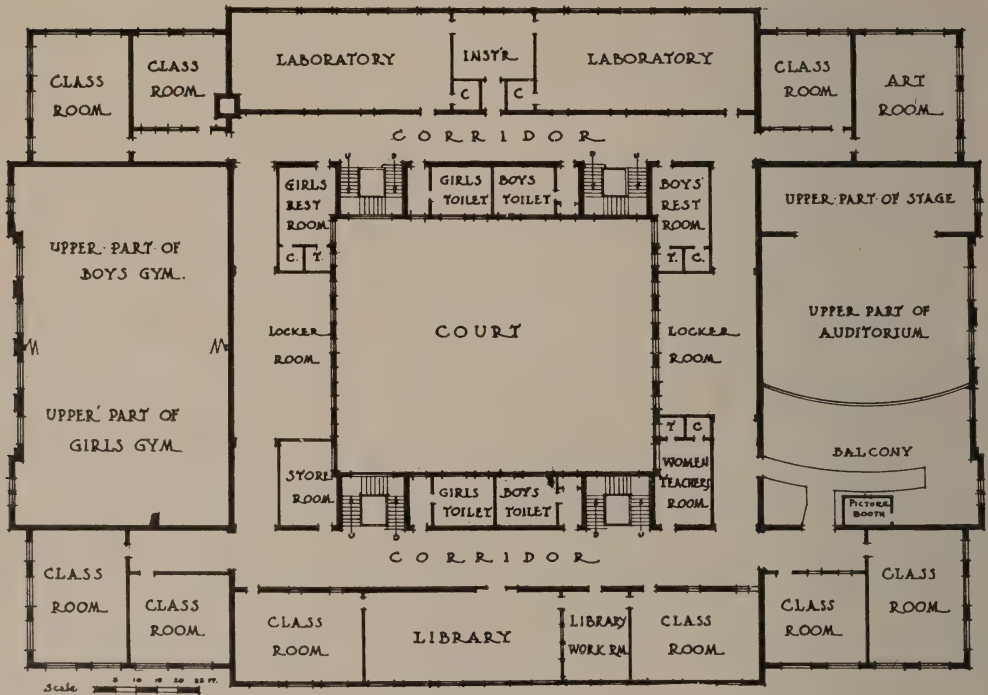
were being given much thought by the teaching profession and those interested in child welfare and improved school facilities. Mr. Ittner was soon to realize the necessity of a solution for these deficiencies, and immediately after his appointment as architect for the St. Louis schools the whole system was given a decided impetus. Such was his influence that within a few years a revolution was brought about in the planning of new schools, not only in St. Louis but over the country generally.

By grouping the windows on one side of the class rooms and adopting the mechan-

ical system of ventilation, a solution of the more serious defects of the old buildings was arrived at by various architects. But Mr. Ittner's conception of the modern school was not to rest here. He conceived the modern school as a splendid civic monument, to become a potent factor in the aesthetic development of the community, as well as a practical building to answer the present-day educational demands. When we stop to consider the various subjects taught in our modern schools, and the uses to which these buildings are put, both for the child and the adult, we will realize that it took



First Floor Plan

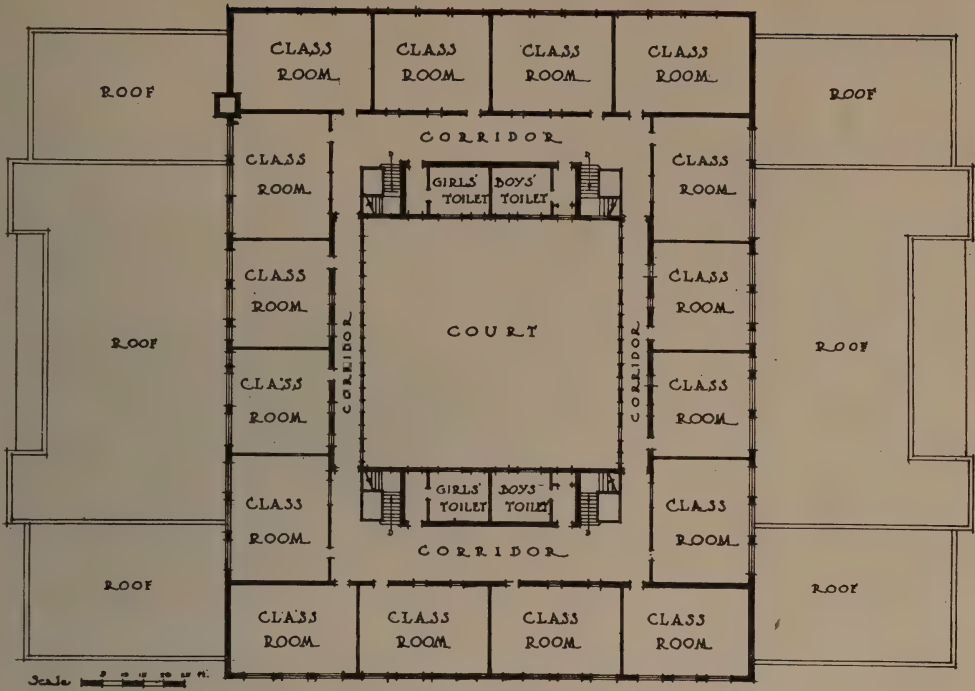


Second Floor Plan

NEW JUNIOR HIGH SCHOOL, JACKSONVILLE, FLORIDA

Greeley & Benjamin, Architects

Wm. B. Ittner, Consulting Architect



Third Floor Plan
 NEW JUNIOR HIGH SCHOOL, JACKSONVILLE, FLORIDA
 Greeley & Benjamin, Architects
 Wm. B. Ittner, Consulting Architect

nothing less than a revolution of the old manner of building to serve the new order of things. Mr. Ittner conceived something more than mere utilitarian buildings; the expanded façades set off by sweeping terraces, beautifully planted, made them into impressive monuments. The large volume of work Mr. Ittner has already executed seems an almost incredible accomplishment for one man, stretching as it does over sixteen states, from New York and Florida to Colorado and Texas. The schools which Mr. Ittner has been building now for more than a quarter of a century, recognized as of a high order of architectural design, are universally referred to as standards, and as typifying the ultimate development of the modern American school building.

There is no occasion here to discuss the general layout of the plans; we will rather point out something of the subtle

charm of their design and their remarkable and creative architecture. The new type of school called for no revolution in the art of design, but demanded an architecture characteristic and expressive.

To be sure, there were a number of contributing causes which marked the passing of the traditional dumb-bell type of building and influenced the new plan. Among these is the open plan permitting better natural lighting and ventilation which Mr. Ittner has brought to such full and complete development, as well as those modifications brought about by the introduction of the kindergarten, the shop, the laboratory, the gymnasium and the auditorium—elements up to that time never found in the school. Where these changes in the plan furnished the opportunity for a totally different type of building there was no attempt in their design to break away from historic precedent, and the marked success which



The Architectural Record

Entrance Detail

February, 1925

YEATMAN HIGH SCHOOL, ST. LOUIS, MISSOURI

Wm. B. Ittner, Architect



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Entrance Detail
HARRIS TEACHERS' COLLEGE, ST. LOUIS, MISSOURI
Wm. B. Ittner, Architect



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Entrance Detail
SOLDAN HIGH SCHOOL, ST. LOUIS, MISSOURI
Wm. B. Ittner, Architect



The Architectural Record

Entrance Detail

February, 1925

COTE BRILLIANTE SCHOOL, ST. LOUIS, MISSOURI

Wm. B. Ittner, Architect

Mr. Ittner obtained in his schools is undoubtedly due to the fact that while sound precedent is the foundation of all his designs there is never a feeling of dry archaeology to any of his work. The new type of school possesses a living force and will remain a distinct contribution to our architecture. Almost all of Mr. Ittner's designs have been based upon the architecture of the English Renaissance. In recent years when the demands of the modern school increased and construction costs mounted, the work of the late nineteenth century in England had been drawn upon for inspiration; but it is the early work of the Elizabethan and Jacobean architects that seems to have delighted him most.

When the designer has gone to these periods for his inspiration, he has been unusually happy in the use of classic detail. These details have been sparingly used, but with much skill so as to give a charming and markedly artistic effect. In the Yeatman and Soldan High Schools, and the elementary schools, such as Clark or Cote Brilliante, the designer has rendered notable essays in the Jacobean and Elizabethan styles. In their mass, these buildings are noble in composition and proportion. The flanking stair towers of the Yeatman High are especially fine. The topping off of these two towers and the band of ornament that ties them together are skilful pieces of design. The central entrance motif of door and grouped windows, united into one mass by the Renaissance details, is worthy of comparison with the best work of its kind in England. There is a new freedom in the manner in which the designer has handled his simple classic details and the treatment and placing of the well chosen ornament; a new feeling has been introduced which gives the old forms new life. In the main façade of the Clark School there is dignity, repose and strength. The central pavilion and the quaint stair towers at the corners are picturesque and unusually happy elements in the composition. In the mellow sunlight of a late afternoon, when the

shadows are lengthened, one should study this building; then the walls take on a tone rarely met with in modern work. The velvet texture of the brick work is not attained every day by the ordinary architect. The blending of soft reds and dull pinks, relieved by the indistinct criss-cross patterns of the brick, has given these walls a novel richness.

The entrance motif of the Harris Teachers' College is a striking piece of design as successful as it is forceful. We recall no precedent for this motif, running as it does full three stories in height, and ending as the main cornice of the building itself. In the Soldan High, a peculiarly subtle handling will be found in the window treatment. They are tied together vertically with lines of stone and these in turn by horizontal lines of stone string courses. The entrance pavilions of the Cote Brilliante and Blow schools are charming pieces of design. In the entrance of the Cote Brilliante School, the pavilion has taken on a playful form, following the outline of the plan. The disposition of the stone to the brick in this building is most happy, while the details of the stone work are examples of how new life can be given to old forms. The coping at the top has an amusing and spirited feeling. The whole pavilion shows great restraint and yet is unusually free and fanciful.

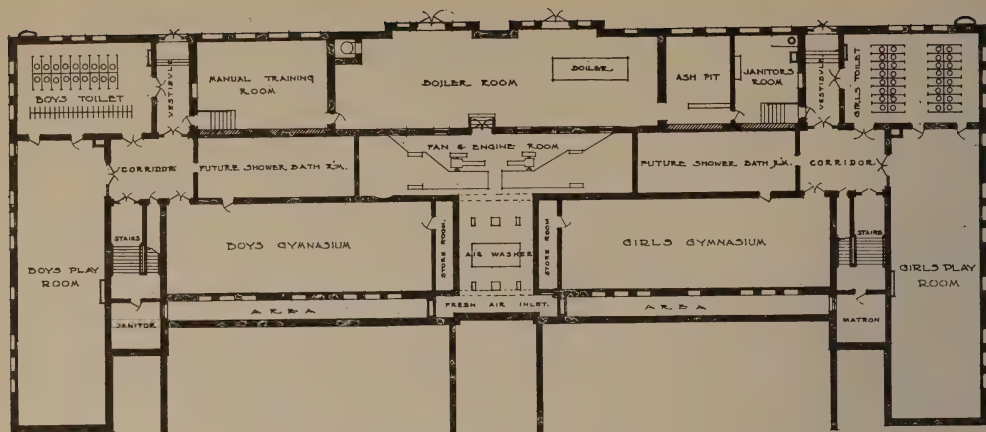
But by no means has the designer held to one style. The Patrick Henry, Humboldt and the Franz Sigel schools are far away from the Yeatman or Soldan High, and yet they seem to be members of the same family. In two of these buildings we meet with elevations which have no central dominating entrance motif, and although its absence is by no means a startling architectural innovation, there is something novel in the treatment of these pleasing and quiet façades. The Baden School is almost devoid of ornament, yet it is unmistakably a member of the same family. Indeed this school might serve as a model of what can be done when funds are scarce.



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WILLIAM CLARK SCHOOL, ST. LOUIS, MISSOURI
Wm. B. Ittner, Architect

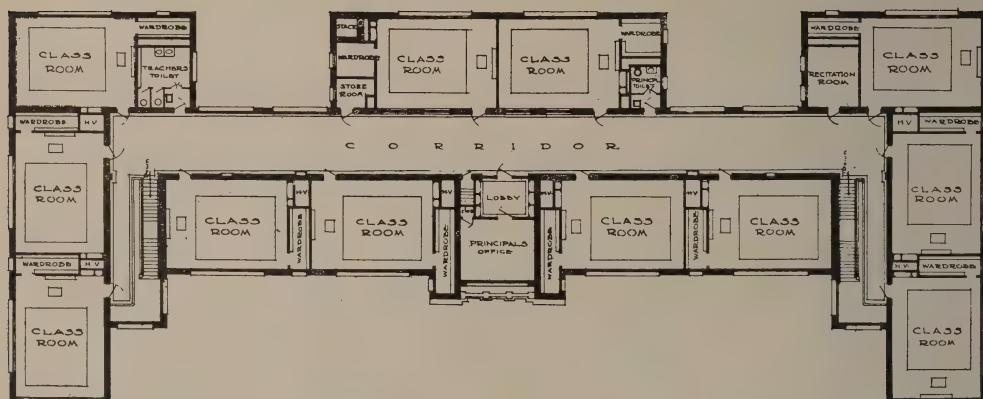
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Basement Plan



First Floor Plan



Second Floor Plan

The Architectural Record

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WILLIAM CLARK SCHOOL, ST. LOUIS, MISSOURI

Wm. B. Ittner, Architect



The Architectural Record

Entrance Detail

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KIRKWOOD HIGH SCHOOL, KIRKWOOD, MISSOURI

Wm. B. Ittner, Architect



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HUMBOLDT SCHOOL, ST. LOUIS, MISSOURI
Wm. B. Ittner, Architect

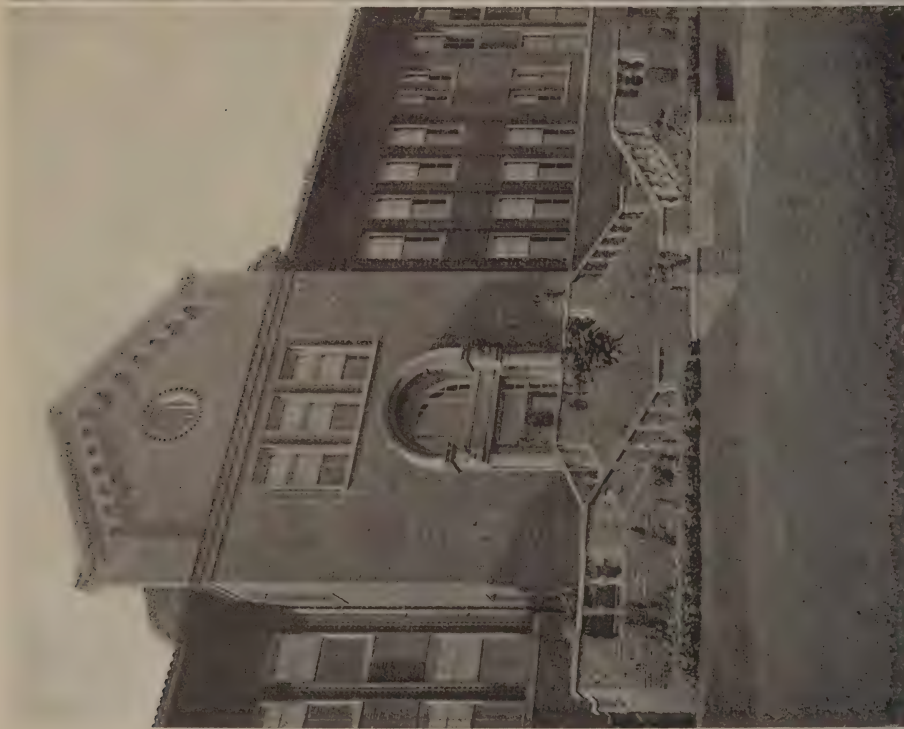
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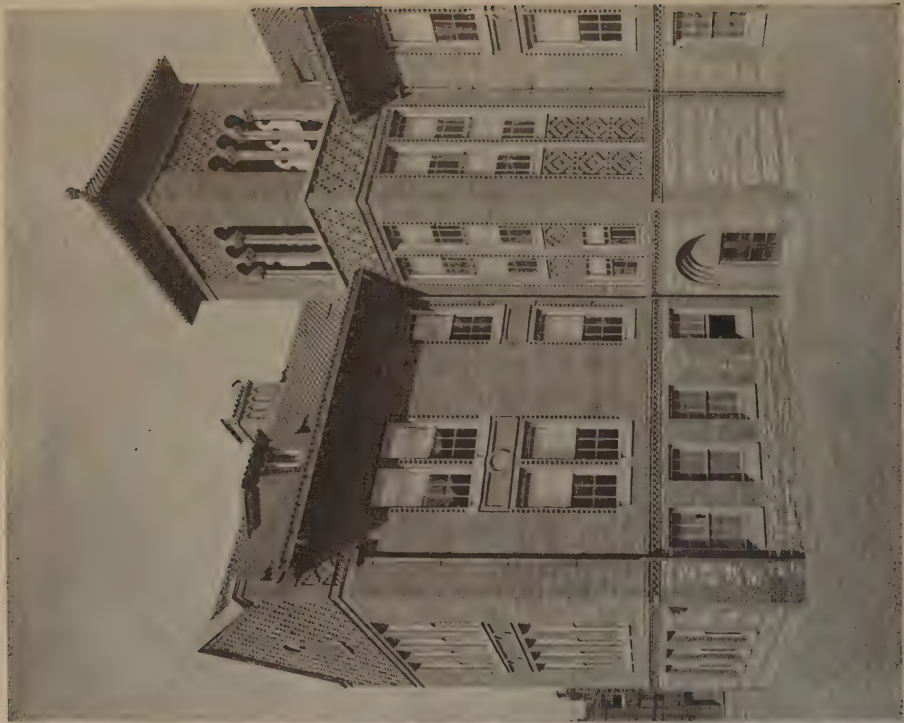
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PATRICK HENRY SCHOOL, ST. LOUIS, MISSOURI
Wm. B. Ittner, Architect

February, 1925



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FRANZ SIGEL SCHOOL, ST. LOUIS, MISSOURI



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PATRICK HENRY SCHOOL, ST. LOUIS, MISSOURI

Wm. B. Ittner, Architect



February, 1925

BLOW SCHOOL, ST. LOUIS, MISSOURI
Wm. B. Itner, Architect

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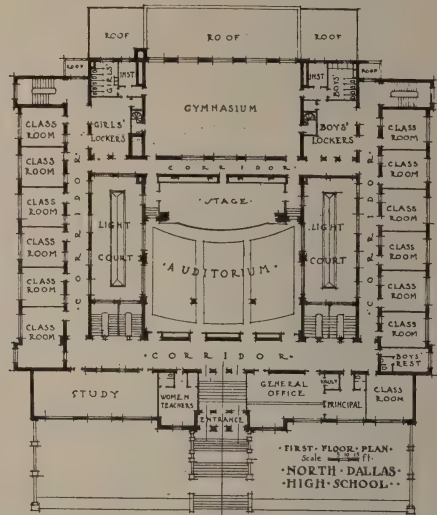
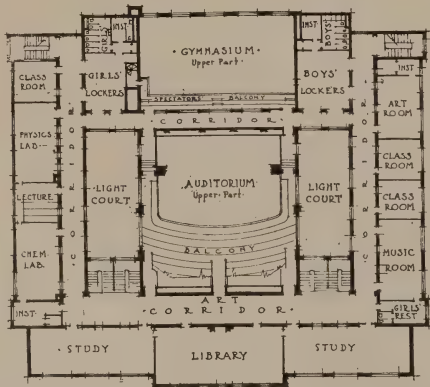
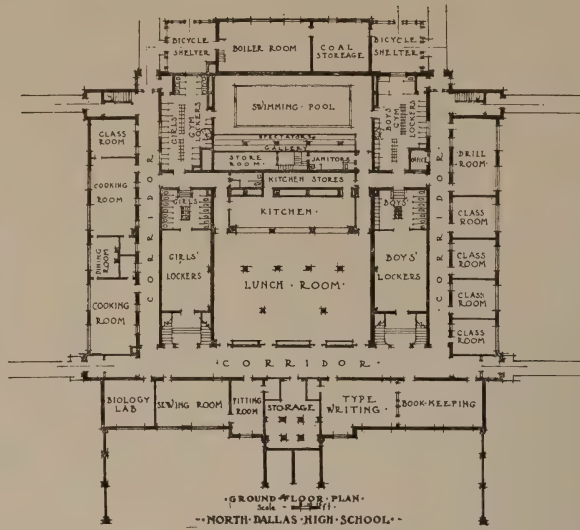




The Architectural Record

Entrance Detail
NORTH DALLAS HIGH SCHOOL, DALLAS, TEXAS
Wm. B. Ittner, Architect

February, 1925



Floor Plans
NORTH DALLAS HIGH SCHOOL, DALLAS, TEXAS
Wm. B. Ittner, Architect

In considering the work of these schools, it should be borne in mind that the architecture which inspired them was that of the domestic work in England; and in its adaptation it became necessary to discard completely the domestic character. These schools designed by Mr. Ittner are *schools*, and could never be mistaken for domestic buildings. It is never an easy task to get the true character of a building even when the designer is following one of the well-established styles, and to take the old manor houses of England, and, in a way, turn them into modern schools devoid of the prevailing institutional character, was no small accomplishment.

The mounting building costs in recent years called for a modification in the design. The more elaborate details in the brick and stone work had to give way to plainer motifs. But in the more severe classic façades, such as the Henry Clay School or the Forest Avenue High School in Dallas, there has been little or no beauty lost as compared with the buildings designed some years before. In the design of the Forest Avenue High School of Dallas great dignity and solidity have been attained, and in a few well chosen details the designer has given all the desired richness and elegance to the façade. Quite different again is the treatment of the North Dallas High School, with the loggia entrance and pilaster treatment around the windows on the third floor. This is another example of Mr. Ittner's characteristic addition of something new to the old form.

One might naturally ask what it is that has given so characteristic and yet not too personal a touch to all of William B. Ittner's work. Perhaps it is in the frank and natural development of his elevations that the vital spark of life has been obtained. If we wish to go a step further and examine the materials used, we find a truly revolutionary use of brick work. The son of a brick manufacturer, it was perhaps only natural that he should discover in the use of brick his most friendly material and most convenient medium. Ever seeking for new effects in the blending of colors, Mr. Ittner has

obtained a greater variety and elegance of texture in his brick walls than perhaps any other living architect. Always using the material at hand, demanding no extraordinarily fine quality of brick, yet with almost uncanny intuition and with the art of a conjurer, he is able to produce an effect in his brick walls that is lovely and rich in color, soft in texture and sparkling with life. In his use of architectural detail, there is a notable restraint and a judicious taste: qualities which we find in the work of the Renaissance architects, and which have been fitly described as bold and vigorous, yet refined and delicate.

In the design of the Central High School at Columbus, Ohio, we find a school of a totally different character. This building is the center of the proposed new civic group and the first to be erected. Here a totally different style became necessary, as the building was to furnish the key design for those to follow. Located on the boulevard skirting the river and with a site covering thirteen acres, opportunity was given for a setting rarely accorded a public school.

At first glance one might say that this building was reminiscent of the new Massachusetts Institute of Technology buildings which form such a remarkable group by the Charles River. And no doubt Mr. Ittner had these Technology buildings in mind when he conceived his Columbus High School. To blot out from one's mind the Technology group when designing a building such as the Columbus High School, would be like closing one's eye to all the great works of the past. Aside from the uniformity in style and material there is little else that makes these groups similar. Careful study of the character and general details will reveal that a totally different hand has been at work. In the Technology group, Mr. Bosworth has admirably used a highly refined and sophisticated architecture which recalls the temples of Pompeii. In the Columbus High School we find a simple, direct and less personal treatment, which seems to draw its inspiration from modern rather than ancient times. We find here a most



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FOREST AVENUE HIGH SCHOOL, DALLAS, TEXAS
Wm. B. Ittner, Architect

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MEDINA HIGH SCHOOL, MEDINA, NEW YORK
Wm. B. Ittner, Architect

February, 1925



The Architectural Record

February, 1925

SCOTTISH RITE CATHEDRAL, ST. LOUIS, MISSOURI

Wm. B. Ittner, Architect



Entrance Detail
CENTRAL HIGH SCHOOL, COLUMBUS, OHIO
Wm. B. Ittner, Architect

happy solution of a building serving a double function.

While we have been accustomed to thinking of Mr. Ittner as an eminent designer of schools, probably his most important and monumental work is a building of a radically different type, a so-called cathedral for the Scottish Rite Masons of St. Louis.¹ It contains an auditorium seating 3,500 persons with a stage having a 98 foot proscenium opening, along with banquet rooms and lodge rooms peculiar to this type of building.

To turn from the subtle charm of the early Renaissance architecture in England, which is so rich in color, so personal,

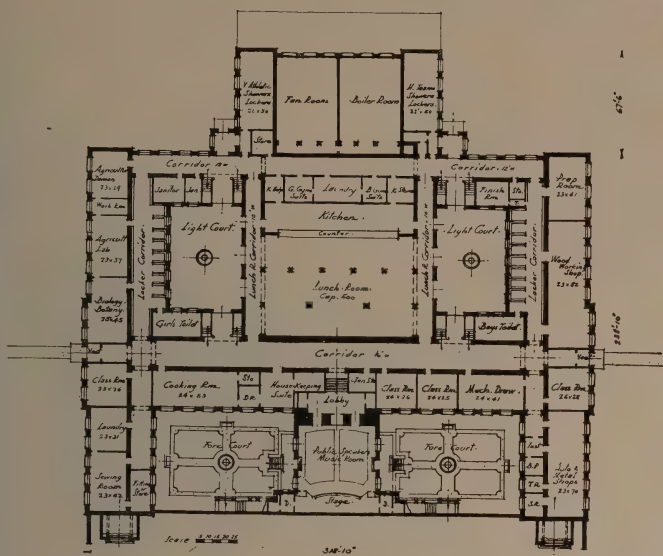
and so playful and to embrace with such success as has been done in the Scottish Rite Cathedral, the cold though stately classic of Imperial Rome is an evidence of marked versatility. This St. Louis cathedral came soon after Mr. Pope's universally acknowledged successful handling of a similar cathedral in Washington, and one might naturally expect that its design would have been greatly influenced by Mr. Pope's façade. No doubt Mr. Ittner was influenced to a certain extent; but except for the line of columns, there is practically nothing in the St. Louis cathedral reminiscent of the one in Washington. In the St. Louis



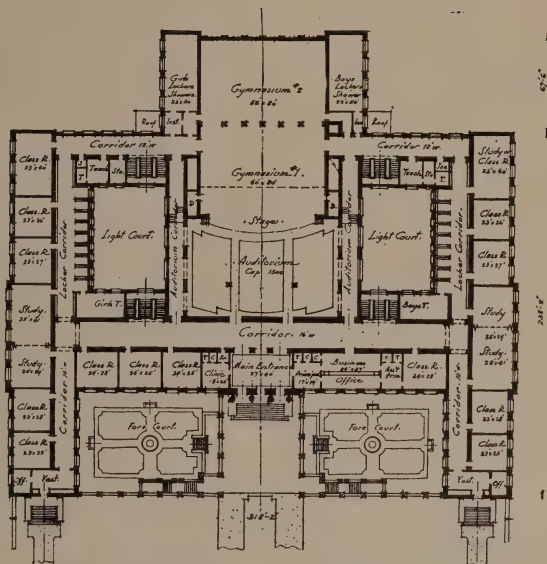
February, 1925

CENTRAL HIGH SCHOOL, COLUMBUS, OHIO
Wm. B. Ittner, Architect

The Architectural Record

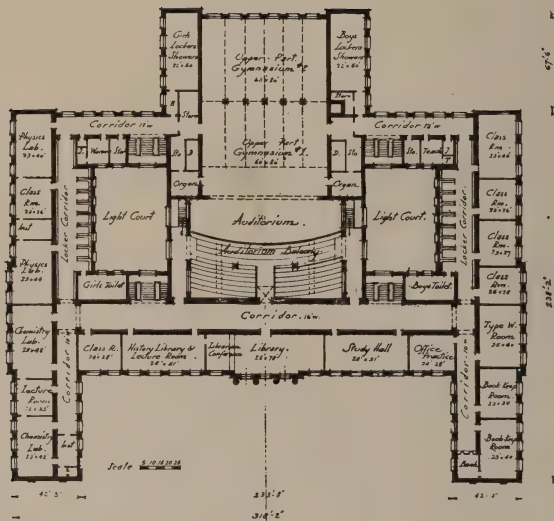


First Floor Plan



cathedral, we again note that modern and free use, not of mere classic detail but of the greater principles of classic architecture. No doubt the designer built up his temple much in the same manner as the architects of classic times laid out their work. The trained eye will instantly observe that while the building has been thought out with great care, its plan is simple and direct. The great wall surfaces, pierced with windows, have given it the same stately dignity that marked the buildings of ancient Rome. One might call attention to the rhythmic play of light and shade in the colonnade or

note how this is contrasted against the great spaces of blank wall; and one can easily visualize the additional richness that this façade will take on with the completion of the sculptured frieze that is run below the base of the columns. But beyond these few remarks, how little one can say. How futile it is to attempt the description of a work of architecture of this sort or of any work of art. It is enough perhaps to recall a few generalities and to rely upon the photographs of the work itself to arouse such emotions as the reader may possess.



Second Floor Plan
THE CENTRAL HIGH SCHOOL, COLUMBUS, OHIO
Wm. B. Ittner, Architect

The LIBRARY OF THE ARCHITECT



By
A Lawrence Kocher

Part VI

SELECTED LIST OF STANDARD WORKS RELATING TO ARCHITECTURE AND INTENDED FOR OFFICES OF ARCHITECTS

Byzantine and Early Christian Architecture

BEYLIÉ, L. M. E. *De L'habitation byzantine.* Grenoble, 1902-03. Plates. Plans.

CHOISY, F. AUGUSTE. *L'art de bâtir chez les Byzantins.* Paris, 1883.

COLASANTI, ARDUINO. *L'art bisantina in Italia.* Milan, n.d. \$50.00.

One hundred large plates with clear details.

DALTON, O. M. *Byzantine art and archaeology.* Oxford, 1911.

A text with many illustrations and plates.

DEHLI, ARNÉ. *Selection of Byzantine ornament.* N. Y. 1890. \$20.00.

One hundred plates presented as line drawings.

DIEHL, M. C. *Manuel d'art byzantine.* Paris, 1910.

———. *Justinien et la civilization byzantine.* Paris, 1886.

GOETZ, W. *Ravenna.* Leipzig, 1901.

HOLTZINGER, H. *Altchristliche und Byzantische Baukunst.* Berlin, 1909.

JACKSON, THOMAS G. *Byzantine and Romanesque architecture.* 2 v. Cambridge, 1913.

KURTH, J. *Die Mosaiken der Christlichen Ara.* Berlin, 1902.

LETHABY, W. R. AND H. SWAINSON. *Church of Sancta Sophia, Constantinople.* London, 1894.

LOWRIE, W. *Monuments of the Early Church.* N. Y., 1906. \$2.50.

RICCI, C. *Ravenna.* Bergamo, 1907.

STRZYGOWSKI, JOSEF. *Die Baukunst der Armenier und Europa.* Wien, 1918. 2 v.

VAN MILLINGEN, ALEXANDER. *Byzantine churches in Constantinople.* London, 1912. 352 ill. \$9.50.

VERNEILH-PUIRASEAU, F. DE. *L'architecture byzantine en France.* Paris, 1851.

In which Saint-Front of Perigueux and other domed churches of Aquitaine are presented.

ITALY

ANDERSON, WILLIAM J. *The architecture of the renaissance in Italy.* London, 1901.

A general view without the use of documents.

BAUM, JULIUS. *Baukunst und dekorative plastik der frührenaissance in Italien.* Stuttgart, 1920.

A general account with profuse illustrations.

BENEDETTI, MICHELE DE. *Palazzi e ville reali d'Italia.* Florence, 1911-13. 2 v.

BLAKESLEE, A. L. *Ornamental details of the Italian renaissance.* N. Y., 1923. \$12.50.

BRIGGS, MARTIN S. *Baroque Architecture.* N. Y., 1914.

A text with moderate size illustrations.

BURKHARDT, J. C., and others. *Geschichte der neueren Baukunst.* Stuttgart, 1887-1911. 4 v.

COLASANTI, ARDUINO. *Volte e soffitti Italiani.* Milan, 1923. \$12.50.

CUMMINGS, CHARLES A. *A history of architecture in Italy from the time of Constantine to the dawn of the Renaissance.* Boston, 1901. 2 v. \$10.00.

DURM, JOSEPH. *Baukunst der Renaissance in Italien.* Stuttgart, 1903.

EBERLEIN, HAROLD D., AND O. REAGAN. Details of the architecture of Tuscany, N. Y., 1923. \$15.00.

EBERLEIN, HAROLD D. Interiors, fire-places and furniture of the Italian renaissance. N. Y., 1916.

——— Villas of Florence and Tuscany. Phila., 1922. \$15.00.

ENLART, CAMILLE. L'art Roman en Italie. Paris, n. d. \$30.00.

——— Origines françaises de l'architecture gothique en Italie. Paris, 1894.

ESPOUY, HECTOR D'. Fragments d'architecture du moyen age et de la renaissance. Paris, 1897-1924. 2 v. \$37.50.

FERRARI G. Lo stucco nell 'arte Italiana. Milan, 1910.

GEYMUELLER, H. VON. Die architektur der Renaissance in Toscana. Munchen 1885-1908. 6 v.

GROMORT, GEORGES. Italian renaissance architecture. London, 1922. \$6.00.

An historical account of moderate reliability but with useful photographs and measured drawings.

GROSSO, O. Portali E. gli affreschi nei palazzi di Genova. Milan, 1910. \$10.00.

GUGGENHEIM, M. Le cornici Italiane. Milano, 1897.

GUSMAN, P. La villa imperiale de Tibur. (Villa Hadriana.) Paris, 1904.

——— Mural decoration of Pompeii. N. Y., 1924. \$15.00.

Containing thirty-two plates in color.

JACKSON, THOMAS G. The renaissance of Roman architecture. Cambridge, 1921. 3 v. \$12.50 per volume.

KINROSS, JOHN. Details from Italian buildings, chiefly renaissance. Edinburgh, 1882.

LANCIANI, RODOLFO AMEDEO. The golden days of the renaissance in Rome. Boston and New York, 1906.

L'ARCHITECTURE EN ITALIE, Paris, n. d. A series of plates illustrating the monuments of Florence, Pisa, Sienna, Rome, Verona, Milan, Venice and Padua.

LETAROUILLY, PAUL MARIE. Edifices de Rome moderne. Paris, 1868. 1 v. text; 3 v. plates. Complete reprint \$60.00.

Most valuable for its fine line illustrations.

——— Le Vatican et la basilique

Saint Pierre de Rome. Paris, 1882. 2 v. plates. \$150.00.

LOWELL, GUY. Smaller Italian villas and farmhouses. N. Y., 1916. \$20.00.

——— More small Italian villas and farmhouses. N. Y., 1920. \$25.00.

MONTIGNY, GRANJEAN DE, ET A. FAMIN. Architecture toscane; palais, maisons et autres édifices de la Toscane. Paris, 1815. Limited size reprint, N. Y., 1924. \$6.00.

MOORE, CHARLES H. Character of renaissance architecture. N. Y., and London, 1905.

MUNTZ, EUGÈNE. La renaissance en Italie et en France. Paris, 1885.

NORTON, CHARLES ELIOT. Historical studies of church building in the middle ages. N. Y., 1908.

OSTEN, F. Die Bauwerke in der Lombardei von 7. bis 14. Jahrhundert. Darmstadt, 1849-52.

PORTER, ARTHUR K. Lombard Architecture. New Haven, 1915-17. 4 v. \$50.00.

The authoritative work for Lombard architecture.

PALAST-ARCHITEKTUR VON OBER— Italien und Toscana vom XV bis XVII. Jahrhundert. By R. Reinhardt, J. C. Raschdorff and others. Berlin, 1886-1924. 6 v. \$30.00 per volume in portfolio.

Large clear plates illustrating the monuments of the Renaissance in Italy in line drawings.

RICCI, CORRADO. Baroque architecture and sculpture in Italy. N. Y., 1912. \$10.00.

——— Architecture and decorative sculpture of the high renaissance in Italy. N. Y., 1923. \$10.00.

RIVOIRA, G. T. Lombardic architecture. London, 1911. 2 v. \$20.00.

ROSENBERG, LOUIS CONRAD. The Davanzati Palace, Florence, Italy. N. Y., 1922. \$10.00.

A restored palace of the fourteenth century, with measured drawings.

SCHUTZ, ALEXANDER. Die renaissance in Italien. Hamburg, 1907. 4 v.

STEGMANN, C. AND H. VON GEYMUELLER. Architektur der Renaissance in Toscana. Munchen, 1885-1908. 11 v.

STREET, GEORGE EDMUND. Brick and marble in the middle ages. London, 1874.

STRACK, HEINRICH. Baudenkmaeler

Roms des XV.-XIX. Jahrhunderts. Berlin, 1891.

A supplement to the Edifices de Rome moderne by Letarouilly.

Brick and terra cotta work during the middle ages and the renaissance in Italy. N. Y., 1914.

SUYS, T. F. ET L. P. HAUDEBOURT. Palais Massimi a Rome. Paris, 1818. Reprint, \$10.00.

SYMONDS, J. A. History of the renaissance in Italy. London, 1898. New ed. 4 v.

THOMAS, W. G. AND J. T. FALLON. Northern Italian details. N. Y., 1917. \$7.50.

TUCKERMAN, ARTHUR L. A selection of works of architecture and sculpture belonging chiefly to the period of the renaissance in Italy. N. Y., 1891.

VENTURI, A. L'architettura del quattrocento. (Storia dell' arte Italiana) 712 ill. 1923.

FRANCE

ARNOTT, J. A., AND J. WILSON. The petit trianon, Versailles. London, 1907. 2 v.

Illustrated with a series of measured drawings and photographs.

BAUM, JULIUS. Romanesque architecture in France. London, 1912.

An English translation of Baum's Romanische Baukunst in Frankreich.

BERTY, ADOLPHE. La renaissance monumentale en France. Paris, 1864. 2 v.

BLOMFIELD, SIR REGINALD T. A history of French architecture from the reign of Charles VIII. till the death of Mazarin. London, 1911. 2 v.

BLOMFIELD, SIR REGINALD T. A history of French architecture, from the death of Mazarin till the death of Louis XV. London, 1921. 2 v.

BONDEL, JACQUES F. Reimpression de l'architecture française. Par 1904-05. 4 v.

COFFIN, LEWIS A., HENRY M. POLHEMUS and ADDISON F. WORTHINGTON. Small French buildings; the architecture of town and country. N. Y., 1921. \$10.00.

CRAM, RALPH ADAMS. Farm houses, manor houses, minor châteaux and small churches from the eleventh to the sixteenth century. N. Y., 1917. \$10.00.

Substance of Gothic. Boston, 1917.

CORROYER, EDOUARD J. L'architecture gothique. Paris, 1891. English translation, London and N. Y., 1893.

DALY, CESAR. Motifs historiques d'architecture et de sculpture. Paris, 1869. 2 v. Reprint \$50.00.

DARCEL, ALFRED. L'art architectural en France depuis François 1 jusqu'à Louis XIV. Paris, 1863-66. 2 v.

DESHAIRS, L. Bordeaux: architecture et decoration. Paris, 1907. \$35.00—Dijon. \$40.00.

EYRIES, G. Les châteaux historiques de la France. Paris, 1877-79 2 v.

GARNIER, J. L. C. Nouvel opéra, Paris. Paris, 1867. 4 v.

Containing Garnier's original plans.

GEYMUELLER, H. A. Die Baukunst der Renaissance in Frankreich. Stuttgart, 1898-1901. 2 v.

GOODWIN, PHILIP L. AND H. O. MILLIKEN. French provincial architecture. N. Y., 1924. \$20.00.

GUERINET (Reprints). Les cathédrales et les églises de France. Paris, 1902.

HONNECOURT, VILLARD DE. Album de Villard de Honnecourt, architecte du XIIIe siècle. Paris, 1906. 68 fac. plates.

JACKSON, THOMAS G. Gothic architecture in France, England and Italy. Cambridge, 1915. 2 v. \$25.00.

LE NAIL, E. Les châteaux historiques de la France. Paris, 1877. 2 v.

MATÉRIAUX ET DOCUMENTS d'architecture et de sculpture. Paris, 1871-1921. (No text.)

MATHEWS, CHARLES T. The renaissance under the Valois. N. Y., 1893.

MALE, EMILE. La cathédrale de Reims. Paris, 1914-15.

MARTIN, CAMILLE. La renaissance en France. Paris, 1913.

L'art gothique en France. Paris, 1911-14. v 1, 2.

MOORE, CHARLES H. Development and character of gothic architecture. N. Y. and London, 1899.

PENOR, R. Monographie du palais de Fontainebleau. Paris, 1859-67, 2 v. Reprint, \$22.50.

PORTER, ARTHUR KINGSLEY. The construction of Lombard and gothic vaults. New Haven, 1911.

——— Medieval architecture. New Haven, 1915. 2 v. \$15.00.

SAUVEGEOT, CLAUDE. Palais, châteaux, hôtels et maisons de France du XVe Siècle. Paris, 1867. 4 v.

VAN PELT, JOHN V. Selected monuments of French gothic architecture. N. Y., 1924. \$6.00.

100 selected examples from works by J. E. A. Baudot.

VITRY, PAUL. Hôtels et maisons de la renaissance française. Paris, 1911, 1912. 2 v. \$80.00.

WARD, WILLIAM HENRY. The architecture of the renaissance in France. London, 1911. 2 v.

Embodies the researches of H. A. Geymueller.

SPAIN

BOTTOMLEY, WILLIAM L. Spanish details. N. Y., 1924.

Large size photographs and measured drawings.

BYNE, ARTHUR, AND MILDRED STAPLEY. Decorated wooden ceilings in Spain. N. Y., 1920. \$50.00.

Photographs, measured drawings and text.

——— Provincial houses in Spain. N. Y. 1925. \$25.00.

——— Rejería of the Spanish Renaissance architecture of the sixteenth century. N. Y. and London, 1917. \$7.00.

Ironwork, screens, altar screens, etc.

——— Spanish gardens and patios. N. Y., 1924. \$15.00.

——— Spanish interiors and furniture. N. Y., 1921. \$40.00.

Photographs and measured drawings.

——— Spanish ironwork. N. Y., 1915.

Catalogue of ironwork in the collection of the Hispanic society of America.

CALVERT, A. F. Granada and the Alhambra. London, 1907. 460 plates.

——— Spain: its architecture, landscape and art. N. Y., 1924. 2 v. \$20.00.

GUERINÉT, A. L'Espagne monumentale. Paris, ca. 1900.

MAYER, AUGUST L. Architecture and applied art in old Spain. N. Y., 1913.

Brief text in English with 300 illustrations.

PRENTICE, ANDREW N. Renaissance architecture and ornament in Spain. London, 1893. Reprint, \$20.00.

The standard work for sixteenth century Spanish architecture, consisting of measured drawings and renderings.

ROMEA, V. LAMPEREZ. Arquitectura civil Española. Madrid, 1922.

Historical account with many illustrations.

SALADIN, HENRI. L'Alhambra de Grenade. Paris, 1920. \$4.50.

SENTENACH, N. Los grandes retratistas en España. Madrid, 1914.

SOULE, WINSOR. Spanish farmhouses and minor buildings. N. Y., 1924. \$10.00.

Photographs and drawings.

STREET, GEORGE EDMUND. Some account of Gothic architecture in Spain. New ed., N. Y., 1914. 2 v.

Edited with notes by Georgiana G. King.

WILLIAMS, LEONARD. The arts and crafts of older Spain. London, 1907. 3 v.

WHITTLESEY, AUSTIN. The minor ecclesiastical, domestic and garden architecture of Southern Spain. N. Y., 1917. \$10.00.

——— The renaissance architecture of central and northern Spain. N. Y., 1920. \$18.00.

P O R T F O L I O

C V R R E N T , A R C H I T E C T V R E



The Colonnade
FORUM THEATRE, LOS ANGELES, CALIFORNIA
E. J. Borgmeyer, Architect



Façade
FORUM THEATRE, LOS ANGELES, CALIFORNIA
E. J. Borgmeyer, Architect



The Rotunda
FORUM THEATRE, LOS ANGELES, CALIFORNIA
E. J. Borgmeyer, Architect

10. 1. 1901

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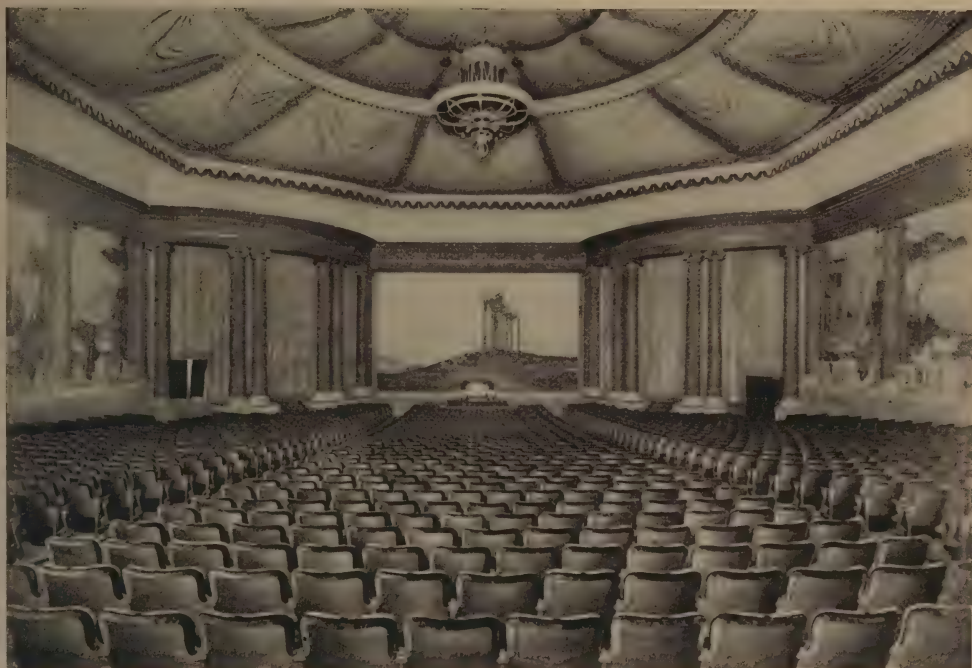
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Inner Foyer

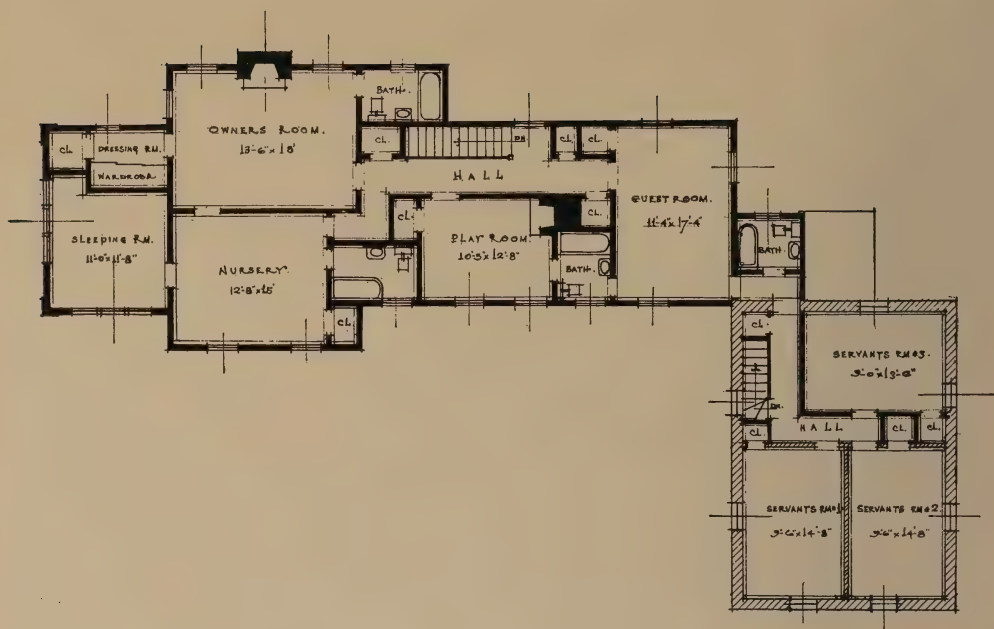


Auditorium

FORUM THEATRE, LOS ANGELES, CALIFORNIA
E. J. Borgmeyer, Architect



RESIDENCE OF WINTER MEAD, ESQ., MORRISTOWN, NEW JERSEY
Polhemus & Coffin, Architects



Second Floor Plan

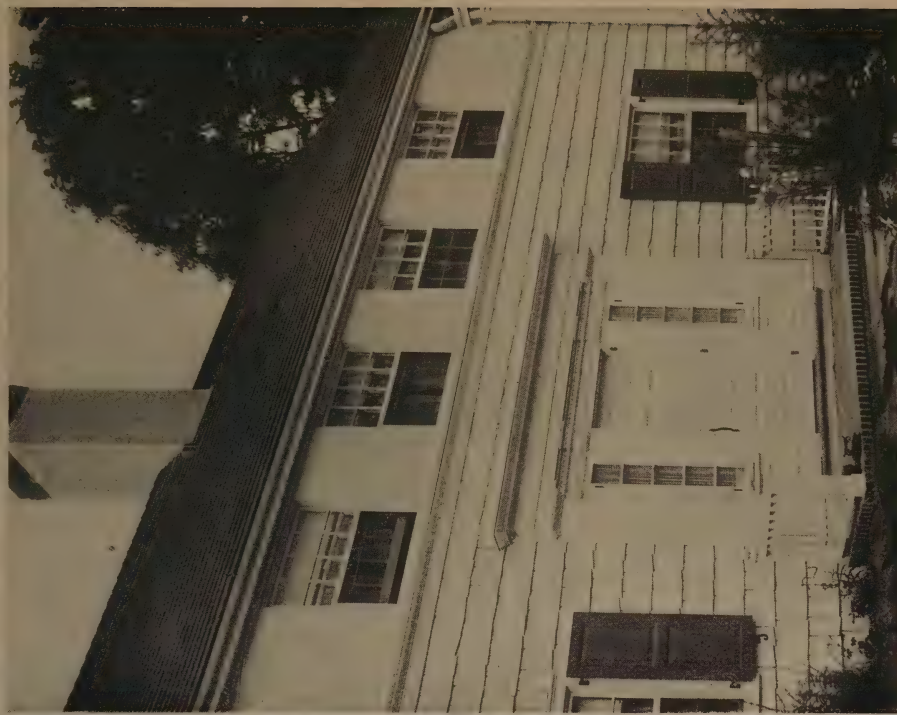


First Floor Plan

RESIDENCE OF WINTER MEAD, ESQ., MORRISTOWN, NEW JERSEY
Polhemus & Coffin, Architects



RESIDENCE OF WINTER MEAD, ESQ., MORRISTOWN, NEW JERSEY
Polhemus & Coffin, Architects

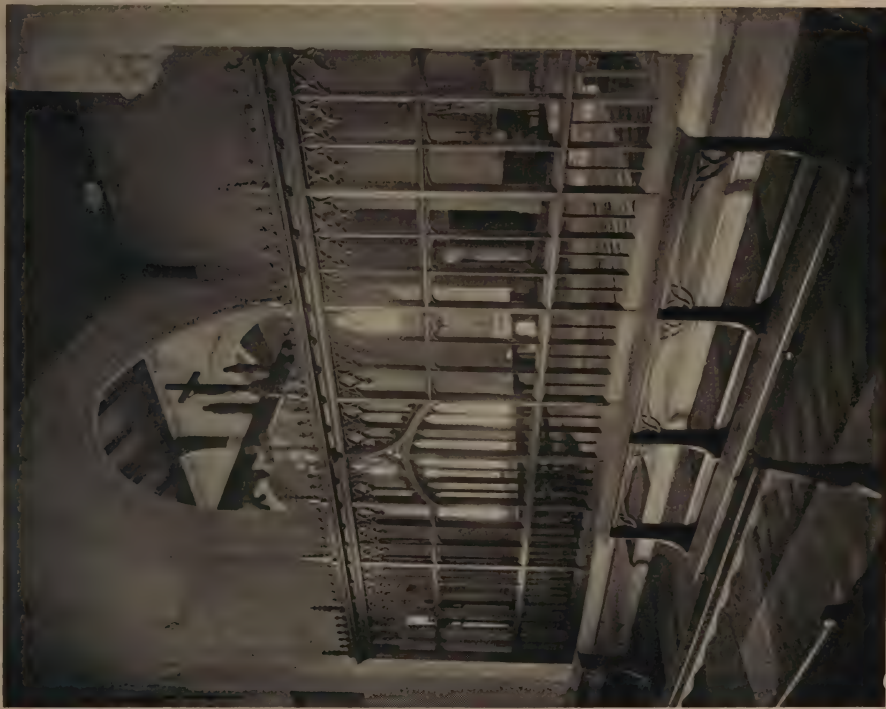


RESIDENCE OF WINTER MEAD, ESQ., MORRISTOWN, NEW JERSEY
Polhemus & Coffin, Architects



Façade

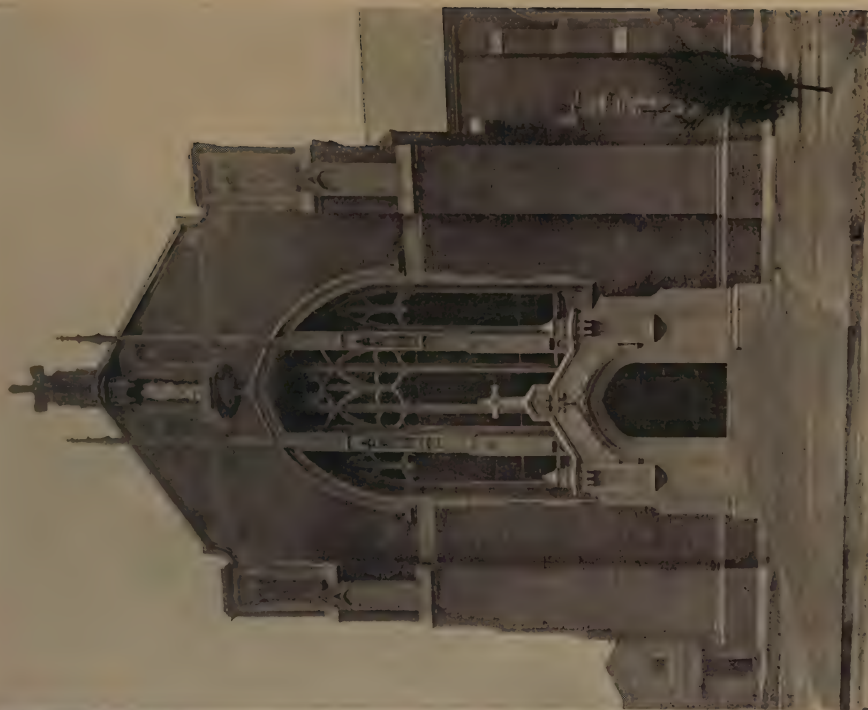
CHAPEL FOR THE URSULINE CONVENT, NEW ORLEANS, LOUISIANA
Burton & Bendernagel, Architects



Screen Between Sisters' Chapel and Sanctuary

CHAPEL FOR THE URSULINE CONVENT, NEW ORLEANS, LOUISIANA

Burton & Bendernagel, Architects



Entrance Detail



Sisters' Chapel



Public Chapel

CHAPEL FOR THE URSULINE CONVENT, NEW ORLEANS, LOUISIANA

Burton & Bendernagel, Architects



HOUSE AT NEW ROCHELLE, NEW YORK
Polhemus & Coffin, Architects



HOUSE AT NEW ROCHELLE, NEW YORK
Polhemus & Coffin, Architects



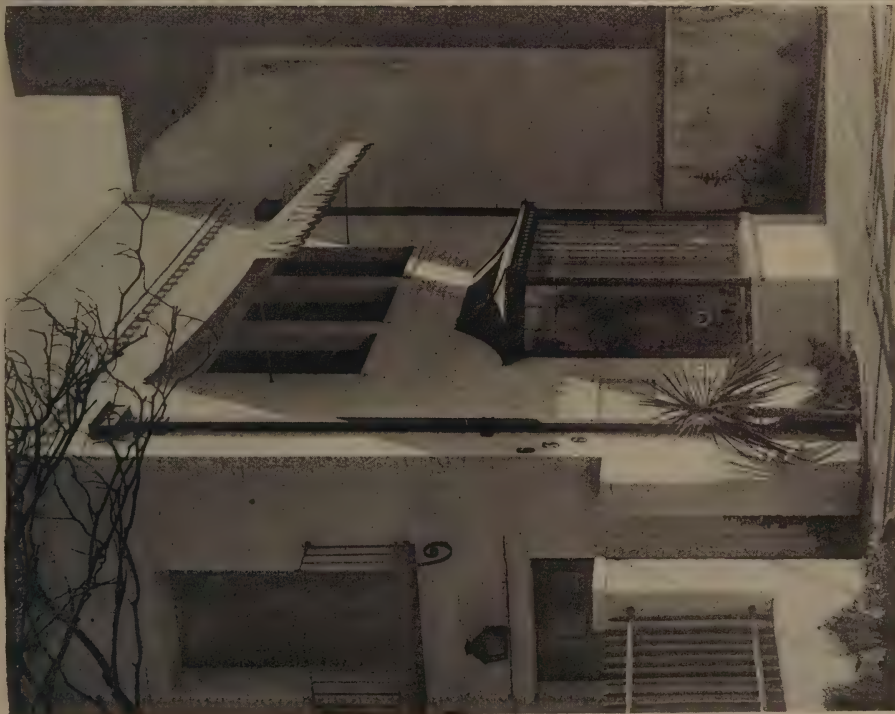
HOUSE AT NEW ROCHELLE, NEW YORK
Polhemus & Coffin, Architects



SHOP FRONT FOR SUMNER BROWN, ESQ., LOS ANGELES, CALIFORNIA
Johnson, Kaufmann & Coate, Architects



SHOP FRONT FOR SUMNER BROWN, ESQ., LOS ANGELES, CALIFORNIA
Johnson, Kaufmann & Coate, Architects



SHOP FRONT FOR SUMNER BROWN, ESQ., LOS ANGELES, CALIFORNIA
Johnson, Kaufmann & Coate, Architects



CHURCH AT CHIPPING SODBURY, GLOUCESTERSHIRE, ENGLAND

— The — ENGLISH PARISH CHURCH AND ITS DETAILS

By
Robert M Blackall

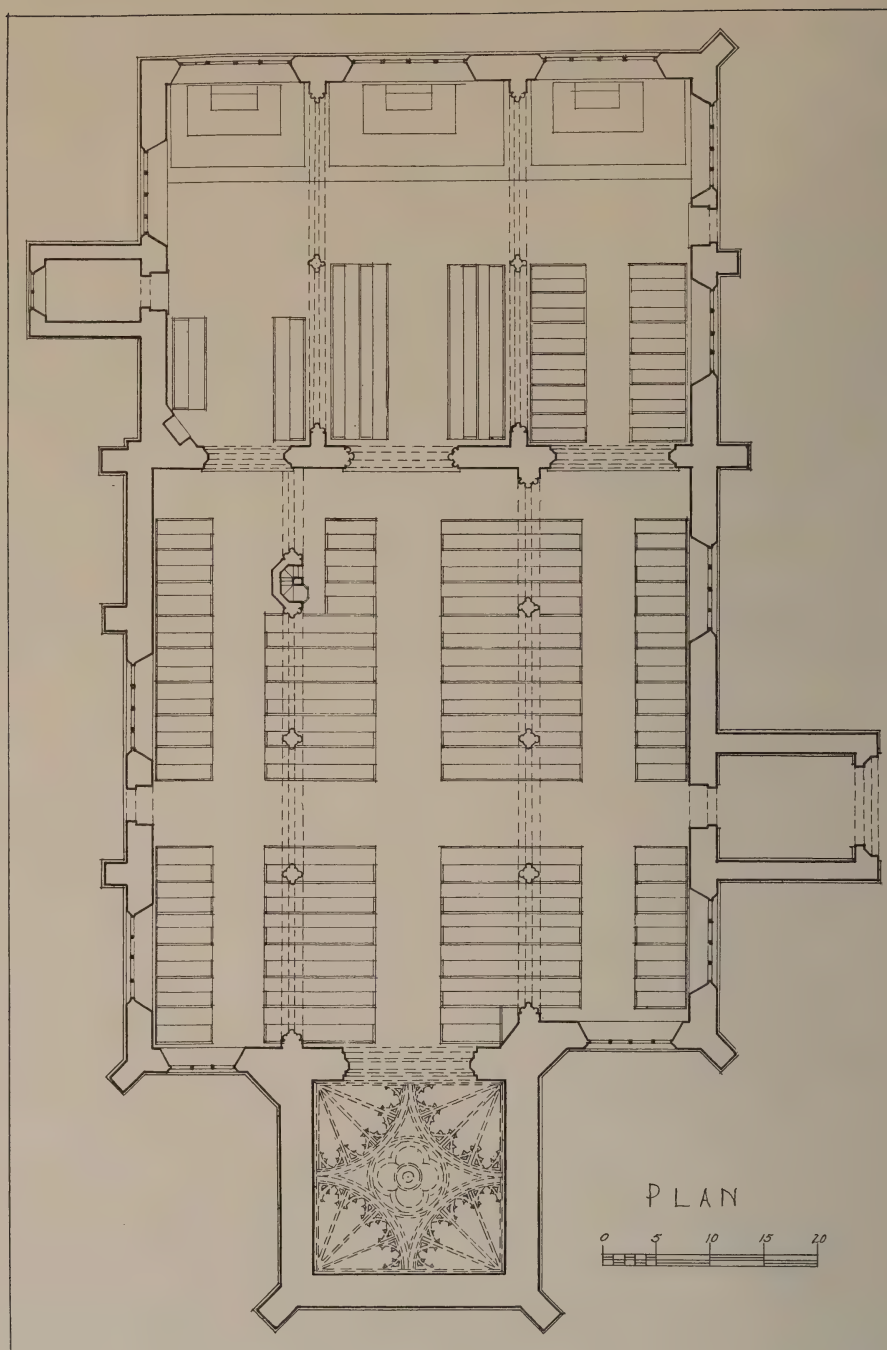
Measured Drawings and Photographs by the Author

CHURCH AT CHIPPING SODBURY, GLOUCESTERSHIRE

IN THE little parish church at Chipping Sodbury in the southeastern end of the Cotswold district we find the fully developed type of parish church plan. The clergy has grown so that it needs three apses and the central nave has been enlarged by two aisles. There is a side entrance to the apse for the clergy and a side porch for the congregation. The tower, which is placed on the center axis, has no door to the outside. A small door has been placed below the window in the right-hand apse for the people to enter

for early communion, and another on the left-hand aisle for passage directly from the nave to the church-yard outside, presumably for burials. The church will seat approximately 200 people, but unfortunately it has gone through a Gothic restoration, taking away some of the quaintness of the English parish church.

The forms and the arrangements of the English parish churches vary according as they are of monastic, collegiate or parish type. The parish type, which is also called the town type, as it is supported primarily by the town, is always arranged to accommodate the con-

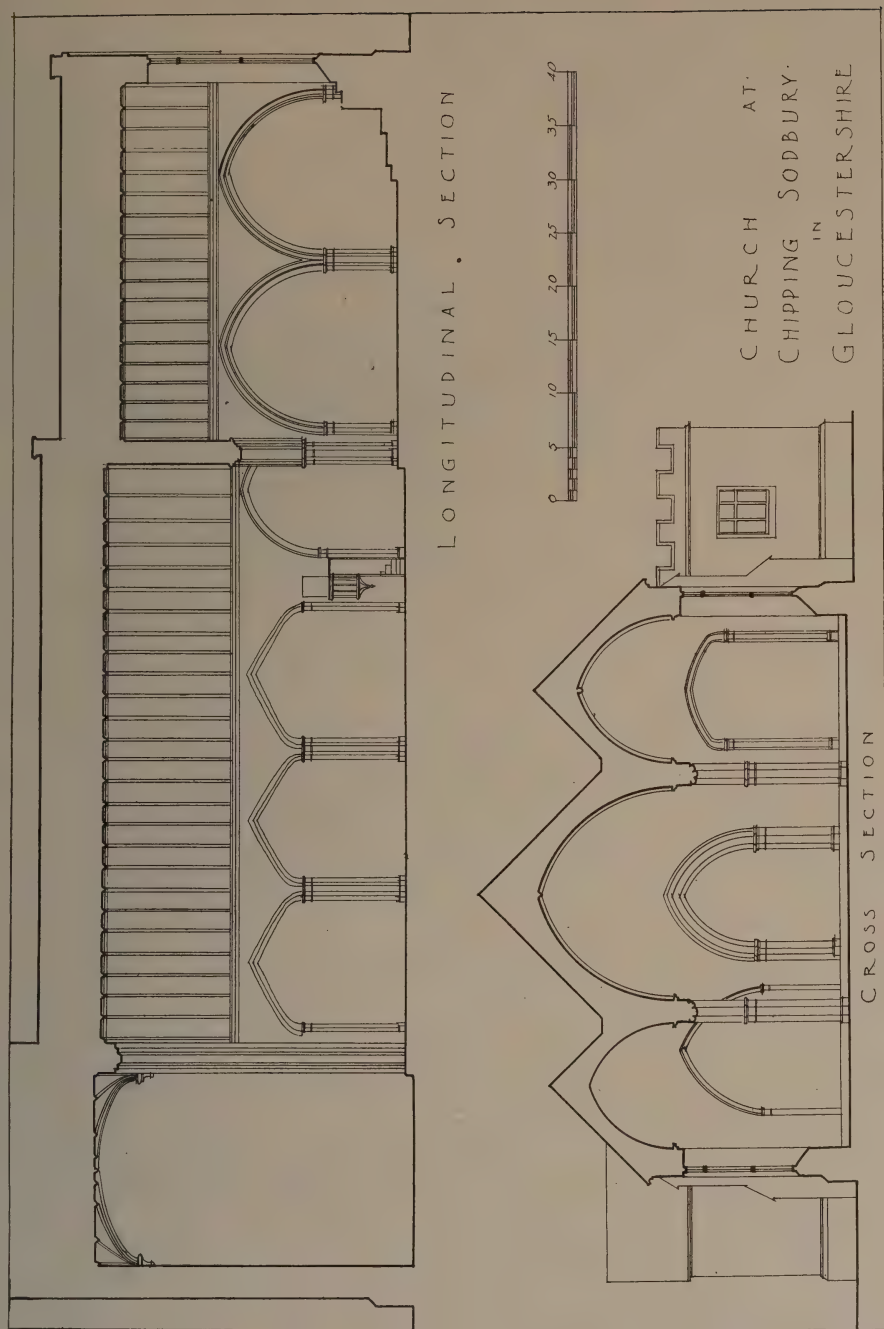


The Architectural Record

February, 1925

CHURCH AT CHIPPING SODBURY, GLOUCESTERSHIRE, ENGLAND

Measured and Drawn by Robert M. Blackall



The Architectural Record

CHURCH AT CHIPPING SODBURY, GLOUCESTERSHIRE, ENGLAND
Measured and Drawn by Robert M. Blackall

February, 1925

gregation for whose benefit the services are carried on, in contrast to a monastic church, which, except in some cases, does not contemplate a congregation. The monastic and collegiate church require considerable space at the altar end of the building, with seats for monks or the incorporated clergy, these seats being known as stalls; but the parish church is primarily for the congregation, and we find always the congregational part—that is, the nave and aisles—enlarged first, with the apse enlargement coming last and usually, as in the case of Chipping Sodbury, used both by the clergy and by the congregation. In Chipping Sodbury the right-hand apse is a morning chapel or communion chapel, and not an apse in a strict sense.

THE CHURCH OF ST. EDMUND'S, SALISBURY

In the Church of St. Edmunds at Salisbury, we find the Parish House developed to the fullest. Not only have two aisles been added, giving the three aisle church, but two chancels have been added to the main chancel, which project beyond the end of the original building.

This church will accommodate approximately five hundred people, and like the church of St. Thomas, also in Salisbury, marks the final development of the English Parish Church plan. It will be noted that the tower is on the axis to the rear, that there is no balcony as in the later churches of the 17th century and that all the seats are on the floor. This type has come down to the United States in our Colonial church.

In section, we see three distinct roofs, which is like the church at Chipping Sodbury. This is unlike St. Thomas, which is of later date and has one pitched roof over the nave and sloping roofs over the aisles. St. Edmunds has only a nave arcade with no clerestory.

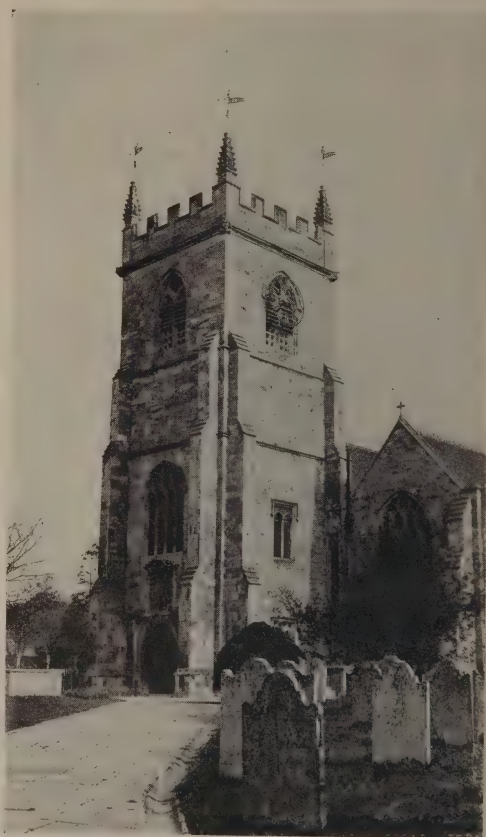
The material of this, like most English churches, is field stone finished and cut with smooth joints; in fact, it is more a small parish church type than St. Thomas, although both are similar in plan. The wall thickness is 2'-8", except-

ing under the tower, where it is 3'-10". The aisles are 19'-3" in the clear; and the nave is 28'-4" wide.

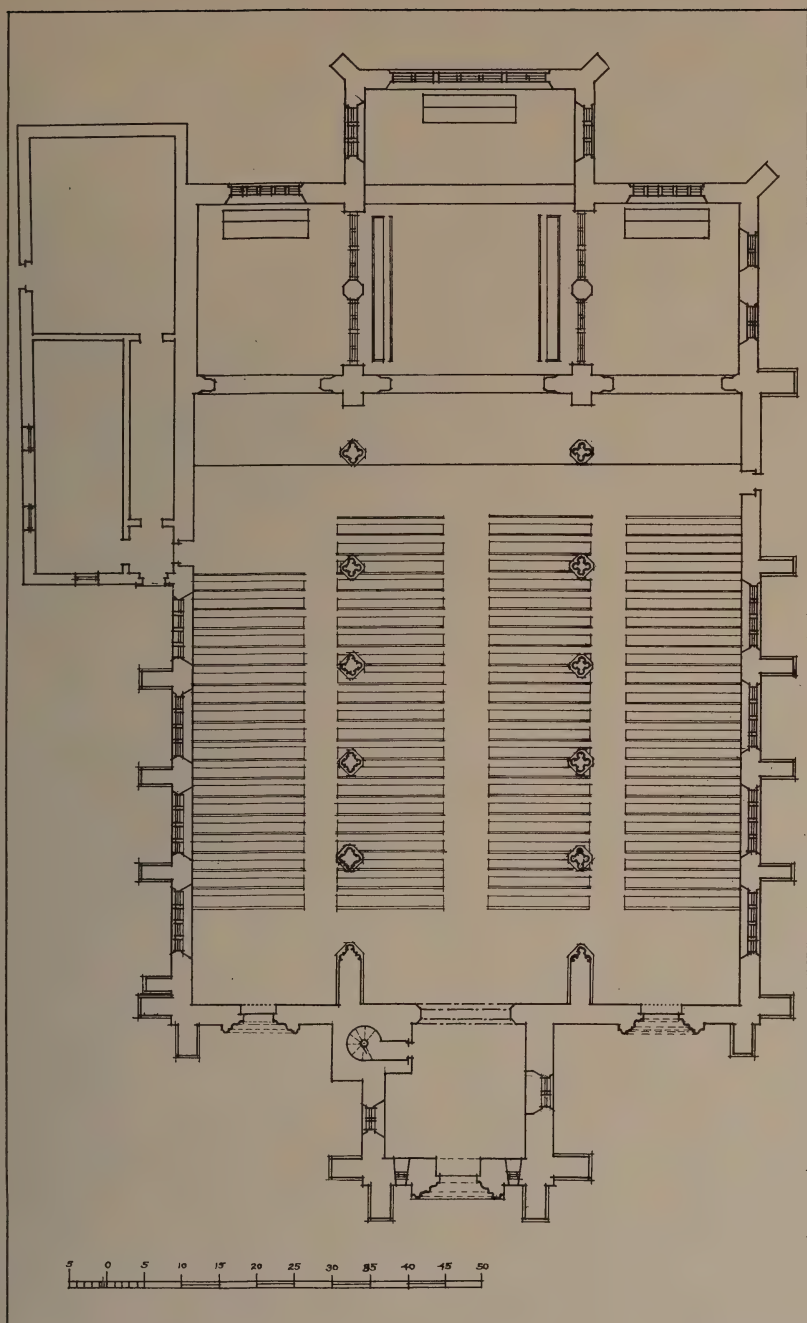
ST. THOMAS AT SALISBURY, WILTSHIRE

Like St. Edmunds, also in Salisbury, St. Thomas is a good example of the fully developed English parish church. There is a nave, two aisles, and three apses. The clergy have been obliged, due to the increased number of people, to have a side chapel, which is placed in one apse, and a morning chapel in the other. The latter at present is not used, being more for storage space. The tower is placed on the side.

In the church at Chipping Sodbury mention was made of the monastic, collegiate and parish, or town, churches.



CHURCH OF ST. EDMUNDS, SALISBURY,
ENGLAND



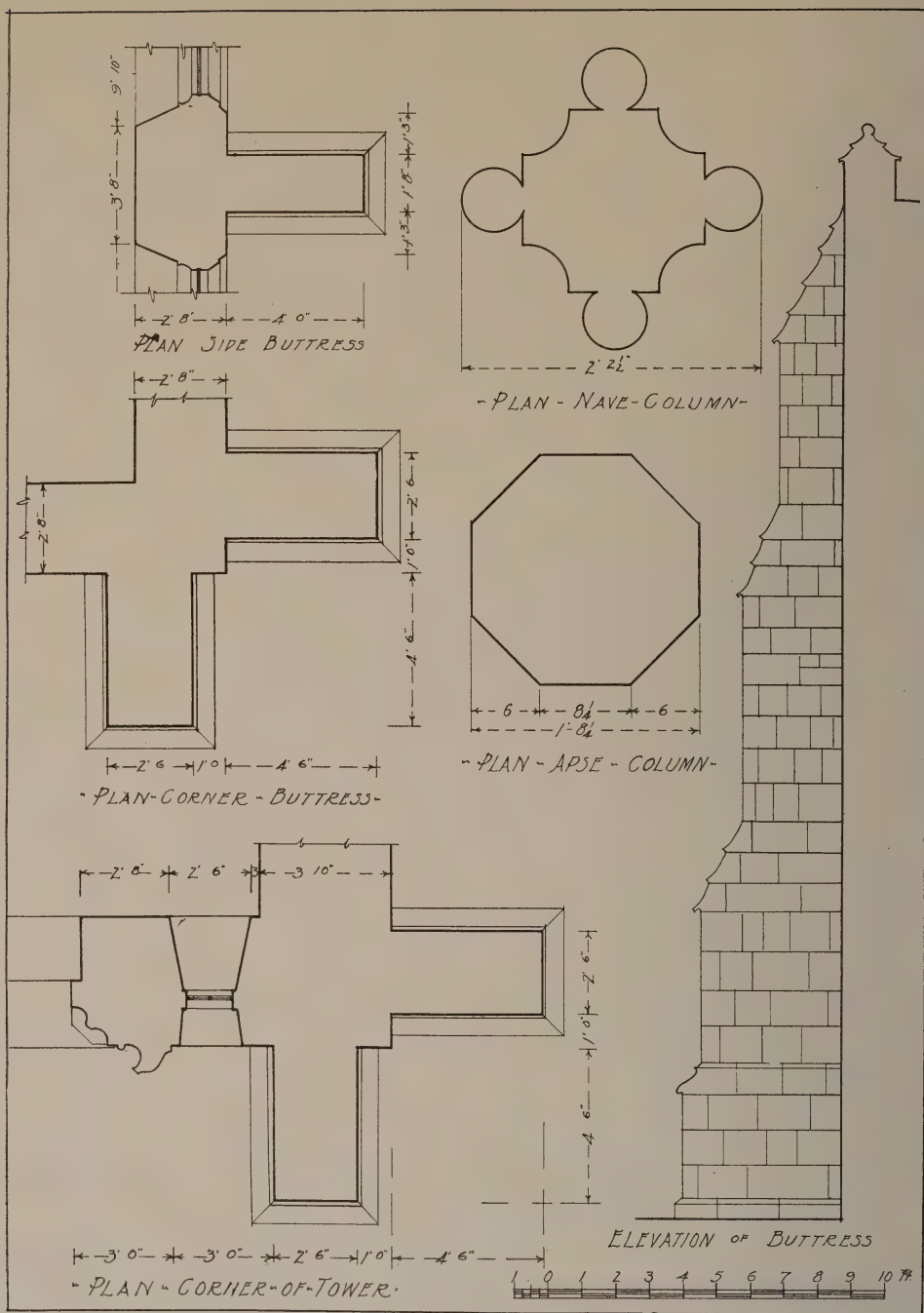
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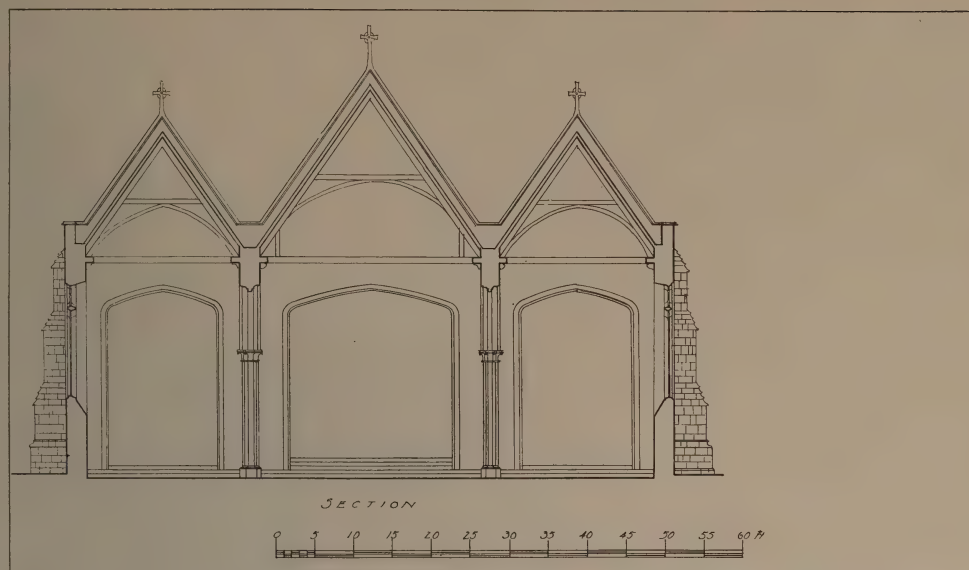
Floor Plan

February, 1925

CHURCH OF ST. EDMUNDS, SALISBURY, WILTSHIRE, ENGLAND

Measured and Drawn by Robert M. Blackall





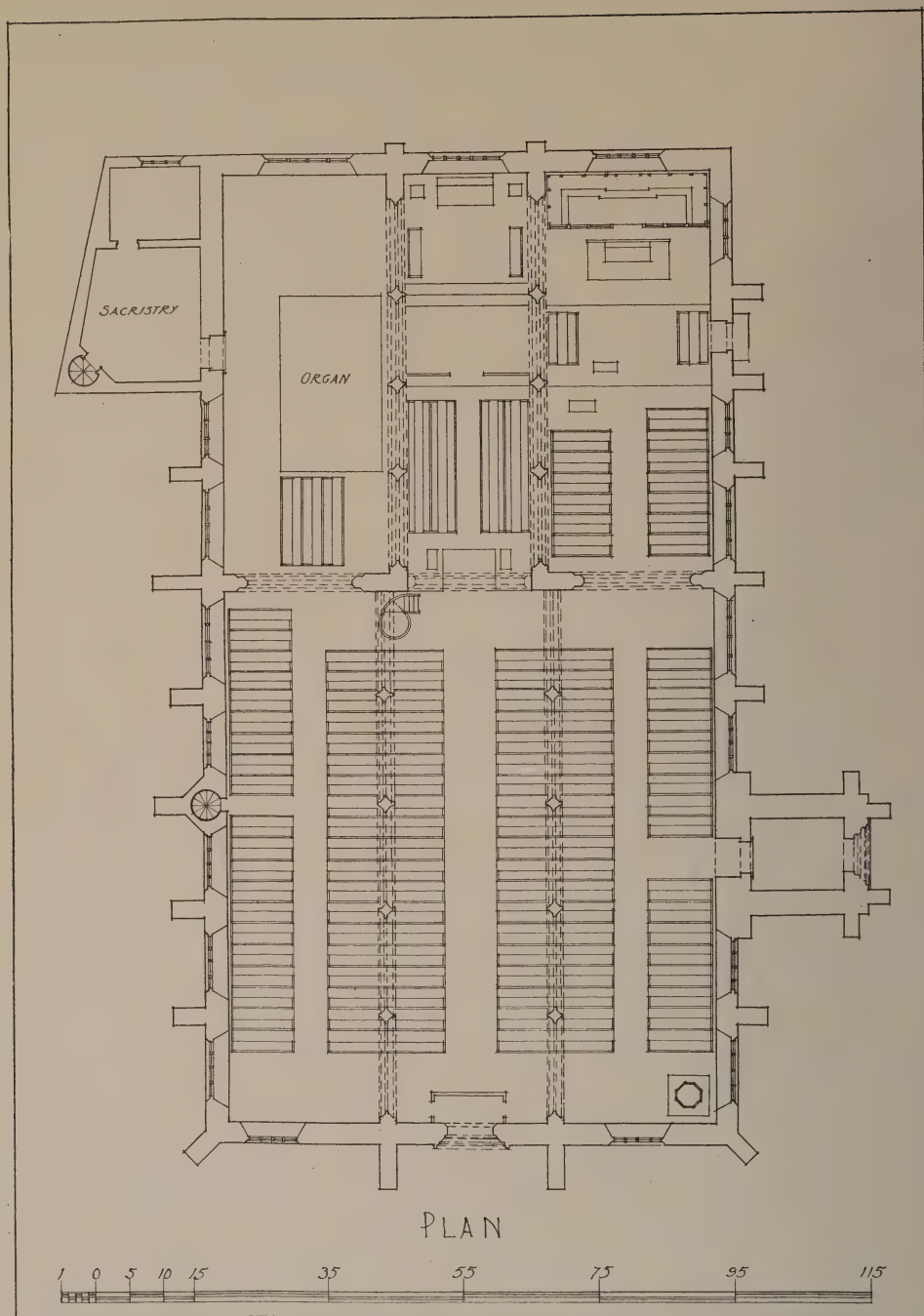
Sectional Drawing
 CHURCH OF ST. THOMAS, SALISBURY, WILTSHIRE, ENGLAND
 Measured and Drawn by Robert M. Blackall

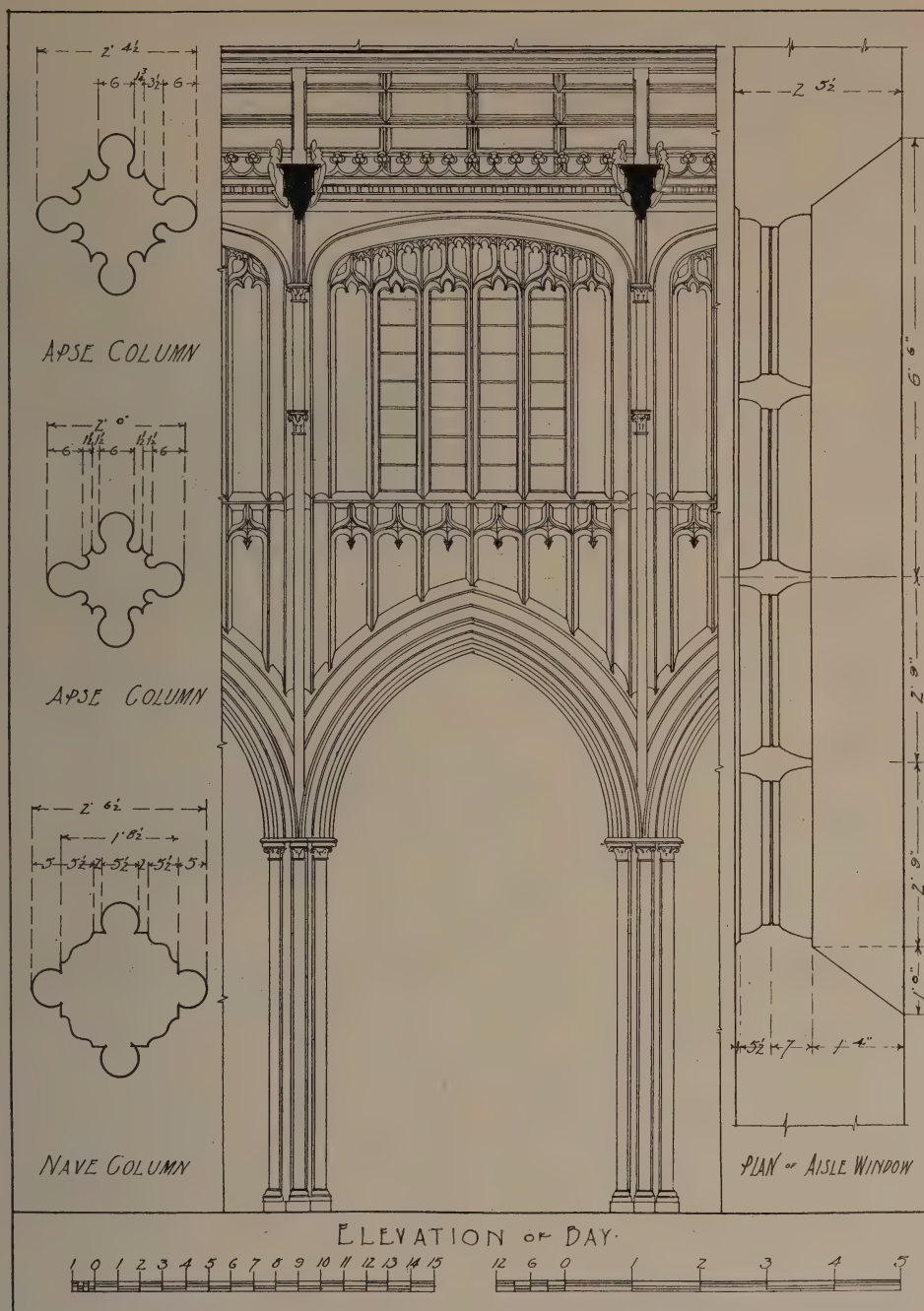
The parish church, and especially the important parish or civic church, exists apart from the cathedral in all the cathedral cities. St. Thomas, belonging to the 15th century, is situated in a cathedral town. It was during the period in which St. Thomas was built that the town church was supplied with a class of fittings that affected their plan and arrangement, and to which municipal insignia were often added. Chantry chapels, containing usually an altar or a tomb, were sometimes built between pairs of the interior arcades. The name is connected with the French "*chanter*" and refers to the singing of the masses, with which the chapel itself became afterwards identified. An endowment secured in perpetuity the services of the chantry priest. The town church of St. Thomas possesses 27 of these chantries, built by the civic guilds, and there are gay and picturesque

doings on the occasion of guild festivals.

The roofs of both nave and aisles are excellent examples of fine wooden ceilings. The nave roof has a king post truss with wooden brackets supported by wooden posts, carried down to stone columns, which set on the top of the nave capital. The ceiling between the trusses is paneled and at the center of each truss are carved figures, presumably angels. The aisle roof has sloping beams with coffered ceiling, all molded and left in the natural color of the wood.

At the end of the nave, over the chancel arch, is a fresco of "The Last Judgment," which has been restored. The elevation of the bay shows a late Gothic order, where the arches are slightly pointed, and the curve is divided into trefoils. There is no triforium, the clerestory and the nave arcade being designed as one unit.







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View in Nave Looking Towards the Altar
CHURCH OF ST. THOMAS, SALISBURY, WILTSHIRE, ENGLAND
Photograph by Robert M. Blackall

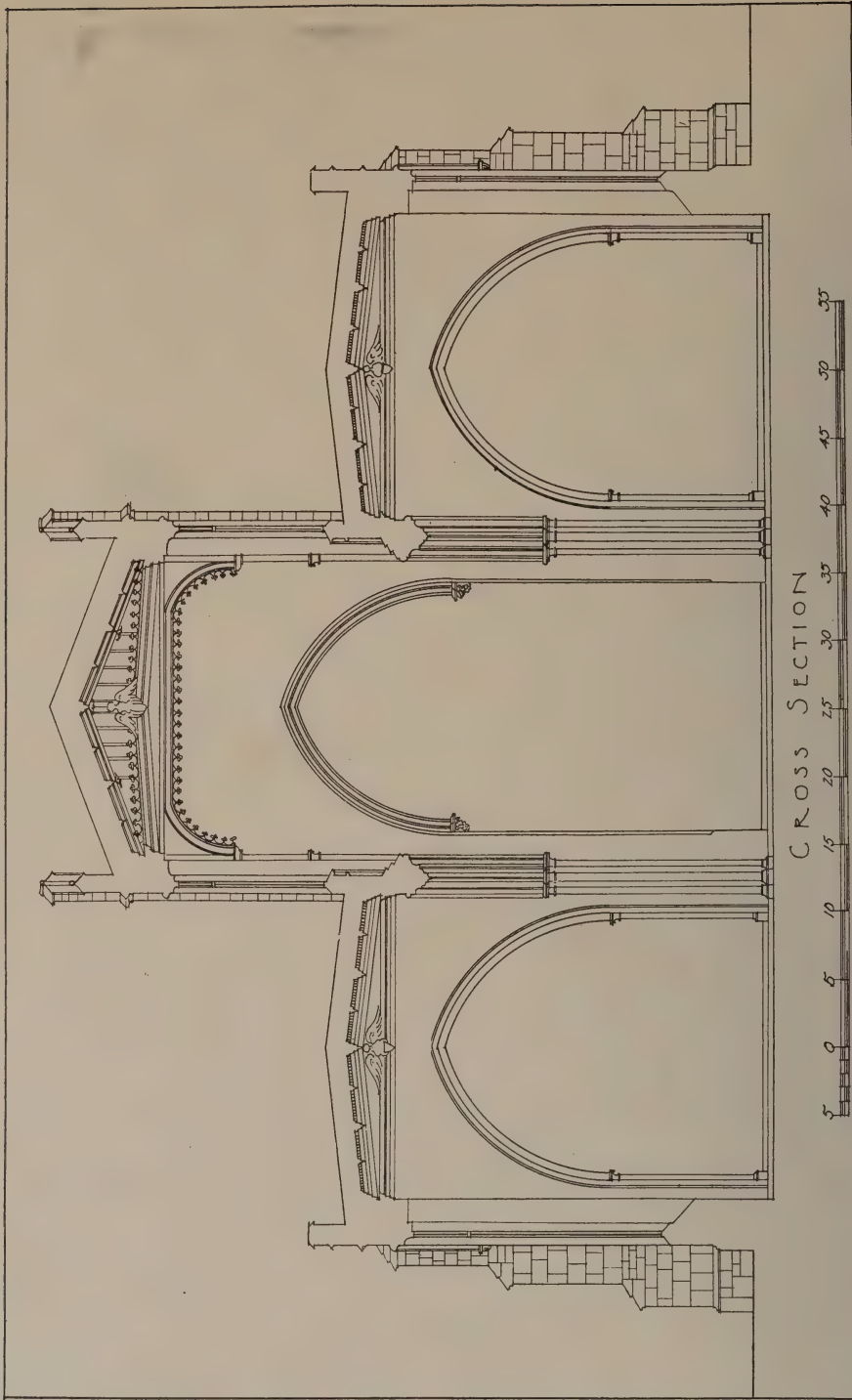
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CHURCH OF ST. THOMAS, SALISBURY, WILTSHIRE, ENGLAND
Facade
Photograph by Robert M. Blackall

February, 1925



IVAN MESTROVIĆ SCULPTOR-ARCHITECT

By
KINETON PARKES

ONE OF THE chief constructive art forces in the world is Ivan Mestrovic (Mesh-trovitch), the Jugo-Slav sculptor-architect who began life as a shepherd-boy and is now potently influencing contemporary life by his revelations of new truth and beauty. This artist speaks in a way which can be understood by those to whom art is a reality and not a mere accomplishment.

Ivan Mestrovic in 1915, when I first knew him, was a quiet grave man, for he was an exile from a war-devastated home and studio and was intent on the revelation of the sufferings of an aspiring national spirit. He is a Croat, born in 1883 at Otavice in the Dalmatian Highlands. In these mountain valleys he tended sheep; carved familiar objects in stone and wood and filled his mind and stirred his imagination with the myths, history and poetry of Serbo-Croatia. This seedling was to have a rich flowering time. When he was eighteen he became a marble-carver's apprentice at Spalato, and gaining a municipal scholarship, passed thence to the Vienna Academy of Arts. Vienna was the centre of the new art-movement then.

At the academy Mestrovic made rapid progress, but outside he made more progress of a less academic character, for no academy could seriously modify so original a mind. In 1897 the more forward artists of Vienna had resolved to found the Secession and their freedom soon resulted in license, but Mestrovic, with characteristic sagacity, failed on the side of the license of the secession as he had done on the side of the academy. He made use of both: neither did him any harm. At no time has he been academic; he has and is, and always will be traditional; but a tradition of a country not of

a school is what has influenced and mastered him. He has remained stubbornly Slav. The Slav spirit has always shown in his work and at one time it was misunderstood and even unappreciated; looked upon merely as one more exuberance of *l'art nouveau*. It was not, as was supposed, Austrian decadence; it was in point of fact new life, new vision, new inspiration. Mestrovic is no Rodin; he is sound where Rodin tended to weakness; he is sure where Rodin faltered. Rodin came at the end of a decaying period. Mestrovic has come at the beginning of a pristine and fecund one: he is one of its most significant and symptomatic signs. He began to exhibit at the Secession in 1902 in the second year of his studentship and proved that the Vienna Academy or any other could not seriously modify his individualism. Neither the effect of the tradition nor the teaching were very considerable for he was a teacher himself and never a follower, and when he emerged into the arena of European art, it was as a master and an original artist.

No one had ever seen such work as his: it had several characteristics that little of the sculpture of the time possessed and the foremost was passion. The frail personality was quivering with the tempestuous desire of expression; within it was an uncheckable motive-power to do what the pressure of the spirit commanded. There were only physical obstacles to be overcome; the spiritual offered no difficulties. This spiritual obsession was compounded of three faculties: the national, the religious and the artistic. Patriotism, after 500 years of repression, still burned with a clear flame in the Serbian artist's breast. It was nurtured by his deep religious feeling, and when his art education

was finished, he was prepared to give his spiritual message to the world in concrete form.

His evangelism began when he was little more than 20. As early as 1906 he was represented in England at Earl's Court in the Austrian Exhibition; in the following year he was showing at the Autumn Salon in Paris; in 1910 at the Vienna Secession—the exhibition of the Free Artists—but it was in 1911 that his greatness startled Europe at the Rome International Exhibition.

Southern Slav Art—the art of the Serbs, Croats and Slovenes—emerges in the twelfth century, in an architecture in which Byzantine and Romanesque form a union. Late in the century sees the beginning of sculpture on the churches; this is followed by metal-work within. These activities became obscured by the Turkish conquest, but the love of art was never successfully stifled in the Slav breast. The peasants continued its cultivation, and there was a revival when Italian influences penetrated in the fifteenth century, as may be seen in the churches of Carinthia, and other influences from further afield, of the seventeenth century, may still be noted in buildings of Zagreb and other cities. The renaissance at the beginning of the last century when the resurgence of national independence appeared was notable in frescoes for the churches, developing into portrait painting; sculpture only made a late appearance. At the Austrian exhibition in 1906 in London, the first important Serbian sculptor appeared; it was Mestrovic, a young man then of twenty-three, for although his compatriot and fellow-sculptor, Toma Rosandic, is a little older, he was not represented then. The Dalmatians have always produced artists, and Mestrovic, Rosandic, Penic, three of the most important, are all sculptors, for the Dalmatian artists have ever been carvers of wood and stone. Many have been architects, too, from the celebrated Rade Borovic of the fourteen century to Ivan Mestrovic of the twentieth. The cathedral at Spalato, almost entirely designed and built by native artists, with its celebrated great carved door of wood, is only one

example of the union of the sister arts.

It was as sculptor-architect that Mestrovic came upon the European scene with the concrete evidences of his great inspiration of the Temple of Kosovo, the great Serbian national monument in embryo; the collection of many pieces, fragments and details all designed by Mestrovic and made by him and his friends and pupils, to commemorate the return of the Serbian nation to its liberties; liberties which had been lost on the great "Battlefield of the Blackbirds" in 1389, when the last Serbian Tsar and the mediaeval Serbian Empire fell to the Turks. In 1912 the pious patriotic aspirations expressed in the model and details of the Temple of Kosovo were vindicated; the prophecy it was designed to foreshadow came true when the Serbian army, after the battle of Kumanovo, marched into the ancient capital, Uskub. Since then much has happened and the Serbs and Croats and their sister-provinces have merged into the new nation of Yugoslavia.

The temple has had two presentations: the first was at Rome, the second at London. In the former case the Serbian Pavilion of the Exhibition was designed so as to be a presentation of the temple itself; in the latter there was a great wood model with details of architecture specially constructed so as to feature the whole edifice when complete. No trouble was spared by its creator. From these two presentations a concrete idea of the temple may be obtained. A loggia leads to a domed entrance hall in which the huge statue of Marko Kraljevic, the most important of the Serbian national heroes, on his great restive charger Sarac, is placed. The walls of this chamber consist of panels in which torsos of Turks are placed, and above, a frieze of Turks and Serbians in warlike action. Two archways lead from the chamber, decorated with the heads designed as grotesques of Turks set in double rows of panels. The steps leading from the chamber are guarded by figures of captive Serbians with long beards, in their dejected attitudes suggesting an approach to the breaking point. All these things symbolizing the suppressed physi-



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Entrance Façade
THE RACIC MORTUARY CHAPEL, CAVTAT, NEAR RAGUSA, CZECHOSLOVAKIA
Ivan Mestrovic, Architect-Sculptor



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Porch Showing Angel Caryatids
THE RACIC MORTUARY CHAPEL, CAVTAT, NEAR RAGUSA, CZECHOSLOVAKIA
Ivan Mestrovic, Architect-Sculptor

cal and emotional fury of an as yet ineffective race. Once inside the temple it becomes a Pantheon in which all the heroes and heroines of the Serbian nation are enshrined and all the trials and virtues represented in great statuary and reliefs; in magnificent realistic figures of typical Slav men and women, and always with a strong and strange religious fervour which coalesces with the national fanaticism. All this was in the mind and blood of Mestrovic when he made the great wooden model of his temple. The model was first exhibited in Belgrade and was at once accepted as the national expression of Southern Slav aspiration held throughout the centuries. It was then seen in Venice and Munich; later in Rome and then in London, some seven years after the Bosnian crisis of 1908 when the artist first conceived the idea of converting and concentrating the whole of the Slav national and religious aspirations into architectonic form in stone.

The great pieces of architectural sculpture begin on each side of the steps; colossal figures and groups. As represented in London there were twelve great allegorical and symbolic plaster figures serving as caryatids in the atrium leading to the central hall, types of Serbian womanhood; two huge groups in marble and four in plaster of "The Widows of Kosovo," or "The Mourning Widows," to be seen between the caryatids, while at the end of the vista there was the great winged Sphinx in the sanctuary of the Temple, a symbolic figure of the destinies of the Southern Slavs.

Here also were the huge torso and colossal head of Milos Obilic, one of the "most noble and vehement of the Heroes" who stole into the Turkish camp on the eve of the battle of the Blackbirds and slew Sultan Murad, the invader of the Slav territory, in his tent.

The series of Serbian Heroes was extended by the inclusion of the fine head of "The Frowning Hero," Serge.

Another hero is the "glorious" Strahinic Ban, whose marble torso is now happily permanently homed at South Kensington Museum.

This exhibition at the Victoria and Al-



Bronze Double Doors

THE RACIC MORTUARY CHAPEL, CAVTAT,
NEAR RAGUSA, CZECHOSLOVAKIA

Ivan Mestrovic, Architect-Sculptor

bert Museum in London was a revelation not only to the British public, but to the artists. Some of the papers cried out about what they called the indecency of certain of the widows and other figures; while the artists and especially the sculptors felt their art outraged. But all it amounted to was that Mestrovic had dared to portray nature as it is and not show it behind a veil of sentimentality, and had asserted the essential unity of architecture and sculpture. He had gone back to the spirit of Archaic Greek and Egyptian work. He had dared to think; dared to impart to marble, stone, wood, bronze and even plaster, an idea; dared



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Interior Showing High Altar
THE RACIC MORTUARY CHAPEL, CAVTAT, NEAR RAGUSA, CZECHOSLOVAKIA
Ivan Mestrovic, Architect-Sculptor

to make sculpture that was not an eternal copy of previous sculpture. He showed that the old way is the new way for sculpture and architects to travel in and he is travelling in it himself.

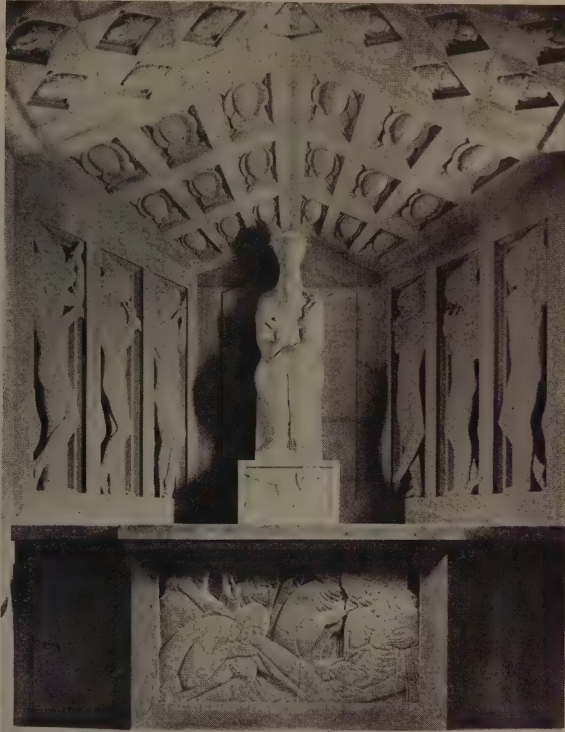
Mestrovic is not merely a sculptor-architect; a designer, he is a maker. He works with his hands as well as with his head. He is a craftsman who hews stone, carves marble, cuts wood and plaster, and is by no means contented with the craft of modelling in clay, which satisfies so many sculptors. Much of his large work is modelled, but he carves in wood himself with a vehemence which marks him as essentially glyptic. Some of the finest and most individual

works are those he has carved in wood, such as the reliefs of "The Deposition from the Cross," statues and groups in the round like his *Ecce Homo*, "Angels in Sorrow," and "Angels in Joy" of his 1924 Exhibition at Fine Arts Society in London.

Religion allied to patriotism is, as I have said, the essence of Mestrovic's spirituality. In this last London exhibition were a "Mother and Child" and "Angel Gabriel" in marble, and a "Madonna and Child," and a "Head of Christ" in bronze. The importance of these single pieces is, however, transcended by the Mortuary Chapel at Cavtat, near Ragusa, which Mestrovic finished in 1922. This is a monument to his spirit-

uality as well as to a consistent architectonic conception carried out in all its details of design and erection by a single artist. Mestrovic in this has risen to an interesting occasion and a great opportunity. In England and America such a

form of architecture is rare, but on the Continent of Europe it is not uncommon. It has the advantage of being the occasion of some of the best combined plastic work the Continent from time to time provides. The Racic chapel is, however, altogether exceptional, as being the work of one artist. The chapel is a simple and intimate monument, full of the religious zeal which has actuated its creator throughout his life. It is impressive yet



High Altar in the Racic Mortuary Chapel at Cartat.
Ivan Mestrovic, Architect-Sculptor.

chaste and peaceful, in spite of its conspicuous sculpture, and its situation is of the utmost natural beauty, on its almost island site. It stands near the end of a peninsula and faces magnificent mountain ranges. It is erected to the memory of a Ragusan family of the name of Racic and includes sculptured standing effigies of the father, mother, son and daughter. The latter originated the idea and the mother, who died last, commissioned Mestrovic to carry it out, which he did during the years 1920-22.

The building is of local stone, Bracca, and Dalmatian marbles, and the sculpture is of the same stone and bronze. It is 16 metres by 14 metres, and 9½ high.



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Chapel of St. Rochus
 THE RACIC MORTUARY CHAPEL, CAVTAT, NEAR RAGUSA, CZECHOSLOVAKIA
 Ivan Mestrovic, Architect-Sculptor

octagonal, including four compartments, thus securing a cruciform plan which includes the porch, the altar and north and south chapels; a cupola roof embodies a lantern bearing an angel in bronze, and within the beautiful bell sculptured with bas-reliefs of saints and a Pietà, the inner roof of the cupola decorated by many small angel heads set in the alternating cubes of stone of which it is built. Beneath are the crypts, marked by symbolic statues on the walls and bearing the names of the commemorated. The marble floor is tessellated, and represents the symbols of the evangelists and the signs of the planets.

Exteriorly the chapel presents an almost plain mass of cubes of stone broken by the porch, which includes two elongated caryatids of angels with folded hands, supporting a plain architrave and a pediment with a carved moulding. Another decorated moulding with a sheep motive forms the base of the cupola, which itself consists of plain oblong slabs of stone overlapping like shingles, and this is surmounted by the arched lantern with the angel in cruciform.

Five steps in the porch lead to the large bronze double doors, with four figures of Slav saints in low relief, with the symbolical snake beneath the feet of the two lower. Around this double panel is a

border with medallions, contained in a continuous spiral, of various other saints and the signs of the zodiac.

The interior is illuminated only from the cupola and six small windows at the sides; the natural light is but dim, and the altar, recessed in the western elongation

of the chapel, is lighted by four large candles in spiral candlesticks on consoles. The front of the altar consists of a large low relief of the Descent from the Cross. On each side the walls above are occupied by recessed high reliefs of three male nude figures playing on musical instruments. The Mother and Child group is mounted on a cubic base decorated with a low relief of the winged Lamb of God, and the head of the Mother reaches to the roof, which is



DETAIL OF CHAPEL OF ST. ROCHUS SHOWING
RELIEF FIGURES OF FOUNDERS OF THE
RACIC FAMILY

carved in small panels of angels' heads and billing doves. On the side walls are reliefs of angels with elaborate wings, each holding a child, their heads reaching to the spring of the roof.

The two chapels are only slightly illuminated by small slit windows, and one of them is the Chapel of the Crucifixion, the back wall of which bears the gaunt Christ, flanked by large candelabra on brackets carved with angel-heads. On the side walls are two reliefs of members of the Racic family. The design is repeated in the opposite chapel of St. Rochus, a



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Details of Figures on Chapel Walls
 THE RACIC MORTUARY CHAPEL, CAVTAT, NEAR RAGUSA, CZECHOSLOVAKIA
 Ivan Mestrovic, Architect-Sculptor

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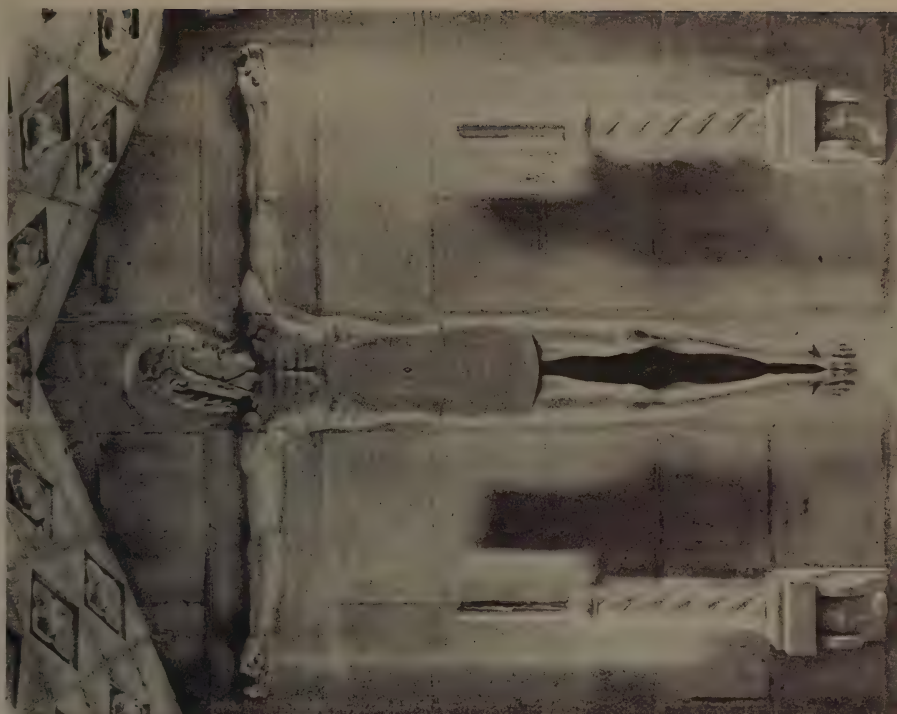


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Detail of Madonna and Child

THE RACIC MORTUARY CHAPEL, CAVTAT, NEAR RAGUSA, CZECHOSLOVAKIA

Ivan Mestrovic, Architect-Sculptor

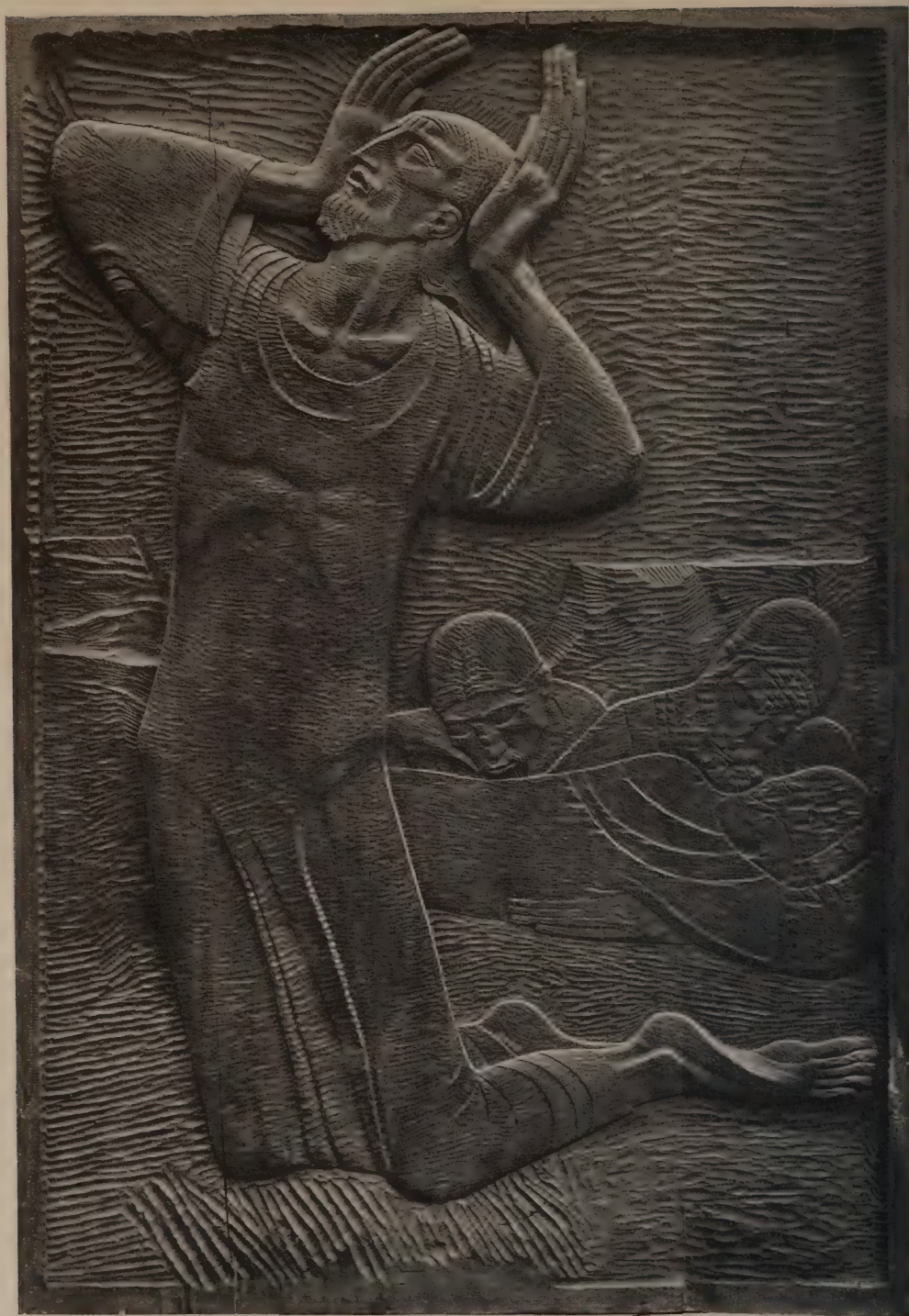


Detail of Crucifixion

THE RACIC MORTUARY CHAPEL, CAVTAT, NEAR RAGUSA, CZECHOSLOVAKIA

Ivan Mestrovic, Architect-Sculptor

February, 1925



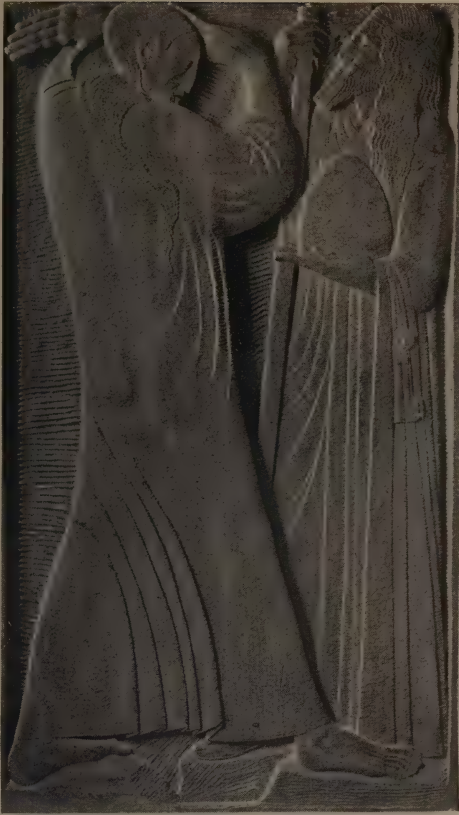
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PRAYER ON THE MOUNT OF OLIVES

Wood Carving by Ivan Mestrovic

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"TEMPTATION"
Wood Carving by Ivan Mestrovic

tall figure with water-bottle and staff, and at his feet a seated hound licking his leg in devotion.

The whole work is a harmony in design. It is symbolic in its conception, for its materials are those of the land in which it is built; its construction is the outcome of its author's passionate nationality: the type-figures of its plastic aspect are those of the Southern Slav, seen in other sculptors of the country as well as in Mestrovic. It is a chapel of death, but it is a chamber in which the continuity of life and the eternity of religion are welded into a single proposition. It has its general spiritual significance, for although it is not a great monument such as a Gothic cathedral, seeing that it is the work of a single artist, it is an indication that the flame of art is still burning; the force of original creation still actively at work in man.

The chapel is more original in its details than in its whole conception, although there are no obtrusive reminiscences about it. In certain details, however, where the artist has been less than himself he has done himself less than justice. The palmette design of the carved moulding of the pediment is quite derivative and moreover its decoration is quite superfluous. Where, however, as in the sheep motive of the moulding of the cupola, even despite its Egyptian suggestion, he has forgotten previous decoration, he is truer to himself. Inside the two lateral chapels the palmette design introduced into the ceiling moulding is even more incongruous, for it has no real relation to the motives used in the rosettes of the ceiling itself. These are small blemishes on an otherwise consistent homogeneity.

Mestrovic is not only patriotic and religious, he is ardently pagan at times, and such works as his splendid marble relief of "The Dancing Woman," seen in 1915 at South Kensington, sufficiently denotes this, as well as his love of pure beauty, expressed in natural line on concrete form. He is a psychologist, too, and his analysis of character is to be seen in his portrait busts of which he has made many in bronze, the stooping Rodin, the dignified Bistolfi, the charming artist's wife, the impressive artist's mother are fine examples, and in the 1924 exhibition where bronzes of Lady Cowdray, and Lady Cunard in the somewhat mannered style he adopted when making portraits in England, a mannerism not to be confused with the essential stylistic qualities of his national and religious pieces. If Mestrovic is a considerable thinker, his intellectual faculty is by no means exercised at the expense of pure beauty, for his expression of his ideal of beauty is original as is the case with all great elemental artists, and he is making to the world a new revelation of the beautiful as well as the true. He is an asset in contemporary civilization, and having achieved a European reputation, should be known to the larger world, and particularly to those who care for the arts and are eager to know of the symptoms and manifestations of the great artistry of the period.



THE DOORWAYS OF PENITENTE LAND

An interesting trace of Spanish tradition in the architecture of our southwest is found in the doorways of New Mexico's Penitente villages.

The Penitentes or Flagellantes belong to a religious cult said to have originated in the third order of St. Francis. They live in sun baked adobe hamlets that dot the dreamlike Rio Grande valley. Though this region is said to be part of the land of "Mañana," the Penitentes are too busy to realize the beauty of their little towns.

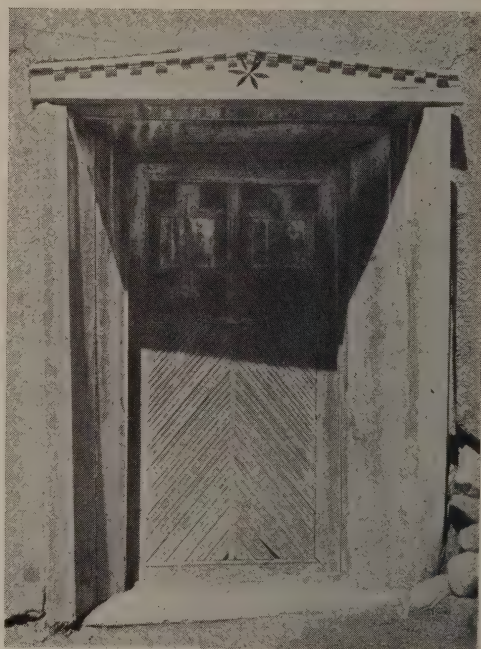
There are crops of chili and frioles to be harvested, there is laundry to be done on the little stone washboards lining the irrigating ditches, there are sheep and goats to herd as well as wool to spin and weave into the blankets that are so eagerly bought by the traders. But Signora or Signor will stop long enough to tell you, if you speak Spanish, of certain treasured possessions of the family. Perhaps he refers to a high posted bed, showing the arrow marks of the "Indios," mementos of its hazardous passage up the Rio Grande; perhaps he refers to an elegantly carved chest that brought silks from Old Spain; but best of all is the door.

With the gentle courtesy of the grandee, Signor will show you his door. It was made by his great grandfather, he explains to you, and this house, the one in which he lives is his great grandfather's "honeymoon house," the home to which he brought his bride so many years ago.

It was not so easy a matter for Signor's great grandfather to make his elaborate doorway as it is for a carpenter of the present day. The many mouldings were hewn by hand and nailed to the board foundation by wooden pegs. The completed door swings

on a pivot hinge carved from a solid log. In many cases the threshold is formed by one of these logs peeled and half submerged in the earth. The lower end of the pivot hinge is shown in the photograph of the opened half door of the Sanctuario at Chimayo.

The Chimayo Sanctuario entrance is different in design from most of the church doorways in Penitente Land. In most of them the cross is the dominating motif as it is the overshadowing feature of the lives of the people. For the Penitentes



Rear door of church at Truchas



Some thresholds are a peeled log embedded in the earth

interpret the Scriptures with a degree of literalness that is amazing to the complicated modern individual. As Signor speaks to you, you see the faint purple cross tattooed under the skin of his forehead, and you know that he has labored under his unspeakable burden up the thorny path to the crucifix on the hill.

The cross can be traced in the patterning of the Trampas churchyard gate as well as on the entrance to the church itself. Sometimes this motif is so altered as to be scarcely recognizable, as is shown in the rear entrance to the church at Truchas.

The "maestro" or the school teacher at Cordova will show you his front door, which is a slightly simplified copy of the Truchas rear church door. A few houses beyond the schoolmaster's, is another, belonging to one

Fernando Lopez who has painted his own name in the pattern on the door. Nor is he the only one in the village who has been brave enough to paint his ancestral doorway.

One is picturesquely done in bright green and white, others in blue and white and still others in plain bright blue which is beautiful against the lovely color of the adobe in the sun. The entrance to the building used as a school house at Cordova is painted white with two squares of moulding near the top that have been outlined in blue. But the most pleasing fine old doorways are those that have been left to the action of the weather.

While nearly all the conscious art of these early workmen seems to have been expended on the outside doors, those on the inside have achieved, sometimes through accident, a success that is as surprising as it is complete.



Opened half-door of Sanctuario at Chemayo. Pivot hinge shows at bottom



Gateway to the churchyard at Trampas

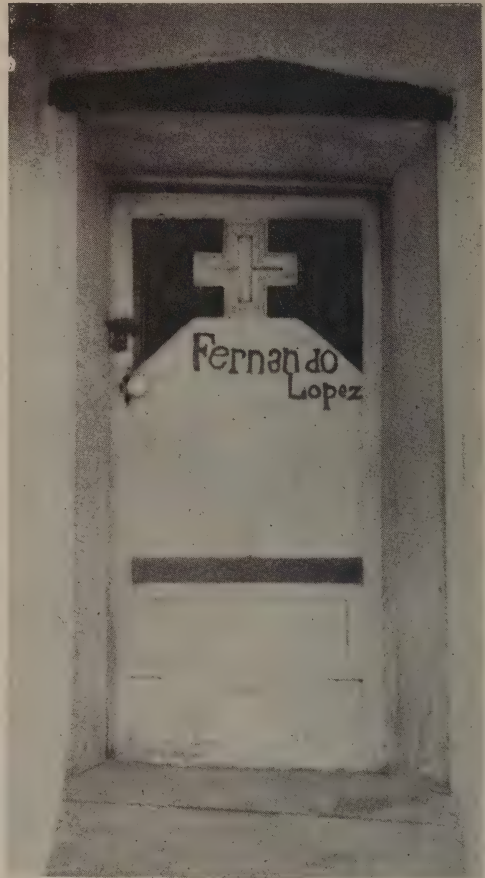
The doorway leading from the little rear room of the Santuario of Chimayo is made of upright boards that are painted bright blue. The steps leading to it and the floor are colored with "tierra amarillo" or earth yellow that is practically identical with yellow ochre, while the walls are of the white mineral earth that reflects so many pearly colors in the half light of a room. Our Lady stands in a little "nicho" at the right smiling blandly down upon her floral offerings and the devotions of the faithful. The door itself is only about four feet six inches high, but it is so cleverly arranged that it forms an interesting decorative feature and greatly adds to the charm of the whole room.

BONNEY R. GAASTRA

A NOTABLE DISCUSSION ON RENDERING, AT THE ARCHITECTURAL LEAGUE

At a recent meeting of the League the above subject was discussed from a variety of angles, covering the psychology of effect, the development of scenic quality with an advantageous impression of scale; and the various media and processes available. The walls of the main meeting room were hung with representative examples collected under the direc-

tion of Birch Burdette Long, the veteran renderer. About 150 members attended the Thursday night dinner, a number which was increased to about 200 at the subsequent discussion. His famous renderings and literature on the subject eminently qualified H. Van Buren Magonigle (ex-president and founder of the Thursday meetings), for leading the debate. The rendering profession was represented by such eminent exponents as Jules Guerin, Birch Long, Hugh Ferriss, Otto Eggers, Chester Price, Otto Langman, and others. The chairman explained the direction which the discussion might follow for the enlightenment of those who came for information, enlivening his introduction with quips and persiflage. He explained that as the usual tendency was one of accord with any views proffered by the speakers he had invited Egerton Swartwout to attend, in order that opposite points of view upon any subject might be forthcoming; it



Door embellished with black and white paint

must be explained that Joseph Pennell was not expected. The general scope of the exhibition was then pointed out, showing how it covered the numerous aspects of rendering; it included examples of the Academic type with precisely projected shadow, in which limestone was depicted in its most immaculate condition, resplendent beneath those air-brush skies so popular in the more serious competitions; the picturesque version was also there in carefully calculated *déshabille*; and the dramatic type, with chronic atmospheric disturbance. The available media were represented by pencil, charcoal, monotone wash, etching, lithography, pastel, water-color, etc.

There was a little difficulty in getting the discussion started, as when several of the most famous renderers were called upon to enlighten the audience as to their views and practices they were obstinately inarticulate, as, apparently, the quality of boldness which characterizes their work does not extend to verbal exposition. The evening only started with Hugh Ferriss' talk, which began as an apparently casual chat on his general experience, but which soon proved to be a profound and brilliant exposition on the art and policies of rendering. It is rarely that the membership of the League has had the privilege to hear any professional subject handled in so thorough and masterly a manner, with so much valuable experience so freely given, clearly reduced to terse expression. He possesses a remarkable capacity for dissecting his problem and diagnosing its abstract requirements with the aim to achieve the material purposes without any depreciation in artistry. He explained the necessity of stimulating specific reactions in the imagination of the observer with graphic statement; the emphasis of any scenic capacity in the architectural scheme; and the consideration of chiaroscuro with reference to scale and the concept of mass. He related an interesting investigation prosecuted with the purpose of ascertaining the relation which should exist between the scheme as stated on the blue print, and the proportional impression of the structure in its rendering. The experiment was made with the Woolworth Building; the first drawing was made to accord exactly with the dimensions recorded upon the blue prints; the second was made from the building itself; and the third was a modification of the architect's dimensions made to accord with the artist's concept of the impression of scale which such a building should make upon the observer's imagination. The result produced was different in each case; and though Ferriss' modesty prevented him from stating which of the three was most satisfying, his hearers all arrived at the same conclusion. As illustrative

of the tribulations of the renderer, he related an amusing experience in which he was commissioned by two parties to make drawings of the same building, one, the manufacturer of its terra-cotta, and the other the plate-glass manufacturer. His individual concept of the significance of the structure pleased neither, as in the former individual's imagination the building consisted exclusively of terra-cotta, whereas in that of the latter it was composed entirely of plate-glass. Many amusing and valuable points were brought out by the speaker, but as he is to write his remarks for publication in brochure form by the League, we will refrain from anticipating them further.

Ferriss was followed by Birch Long, who touched much too briefly upon his lithographic work to satisfy his audience. The proofs which he exhibited were in every way admirable both in textural quality, composition, the expression of detail and atmospheric content; the skillful manner in which the focus of interest was manipulated, and the informative character of the detail reminded one of the feeling of that great lithographic master, David Roberts. His lithograph of the Tribune Building of Chicago is a rare and distinguished example of architectural rendering of the highest type; it stands detached from its original purpose through the delicacy and force of its artistic and technical achievement.

This meeting was typical of the activity of the Architectural League. Through the determination of that Society to suppress any symptom of Academic hard-shell, it has become the recognized clearing house of ideas for the younger element of the profession. The League realizes clearly that we are entering upon a critical stage of artistic evolution in this country, and that those vital and radical changes which are bound to assert themselves, will originate with the younger element, who must have opportunity to test their ideas in the assay of open discussion.

LEON V. SOLON

THE CLASSIC IN THE SKYSCRAPER

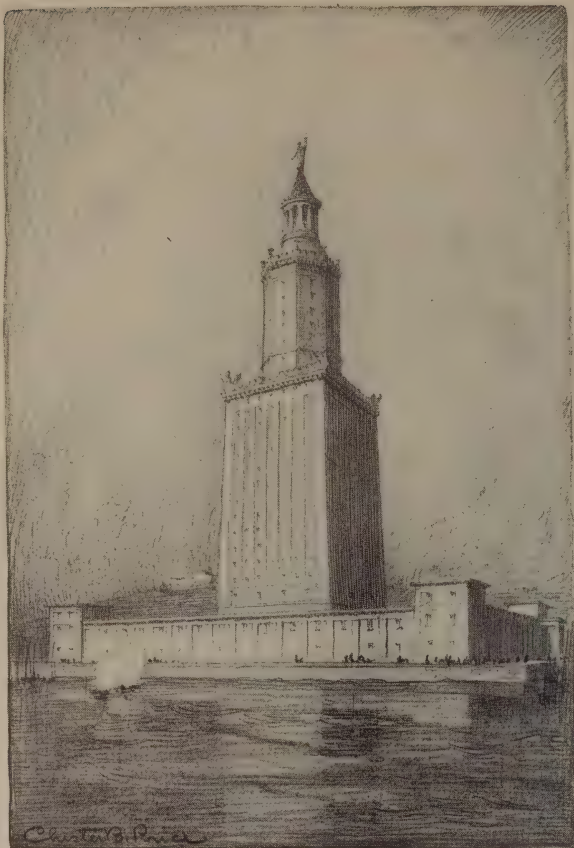
The classic style is not merely a matter of certain details, like the Orders, as some people seem to think. It is essentially one of geometrical simplicity and clarity of form. The ancient temple, square or circular, was enclosed by a single unbroken bounding line. The primary effect of the Monument of Lysicrates is due, not to its delicacy of detail, but to its orderly variety of simple centralized masses, square below, circular above.

The return to this elementary uniformity and harmony, rather than the reversion to Renaissance or antique details, was the essential

characteristic of the movement led by McKim, Mead and White in the 'eighties. In the Boston Library they used that unbroken, uniform facade which Guadet had been saying would have such a great effect, by contrast to the Beaux Arts system of characteristic emphasis. In the Columbia Library and many other works they revived the centralized scheme of composition.

They and their followers, in the earlier years, applied the principle chiefly in the public and domestic buildings of ordinary height. When they finally came to the high building, about 1908 to 1912, they brought with them the lesson of clarity and order in surface treatment, in fenestration, and in mass. In the Fifth Avenue apartments they returned to unbroken planes and equalized proportions. In the Municipal Building, under different conditions, they attempted a centralized upbuilding of masses.

When the Zoning Law came, demanding broken masses, the variety of these might readily have taken on a "picturesque" irregularity and a symmetry. It was the force of the classical tradition that, instead, kept them geometrically simple, and subjected them to balance and measure. In the Fisk Building it is a grandiose symmetry, in the Shelton and the Fraternity Clubs it is a centralized grouping of rectangular masses only in one case, of octagonal forms also in the other. To speak of such buildings as different in "style" is to limit style to the most superficial of details. In the lower stories of the Shelton and of the Park Lane, for instance, the motives and disposition are identical. Though the profiles of capitals and mouldings may be suggested by



Thiersch's Restoration of the Pharos at Alexandria

antique forms in one, by mediaeval forms in the other, both buildings are alike classic, in the broad sense, and highly modern.

When we think of a tower we somehow tend to think of a Gothic tower. We forget that there was such a thing as a classic tower—one of the greatest of all time, indeed, in the Pharos. Freed from myth, as we see it in Thiersch's restoration, the Pharos might give us inspiration for our own problems. Above a low surrounding structure (it might stand in a "one-and-one-half times district") towers a tall square shaft, diminishing to an octagon and then to a circle. Impractical? Not more so than the Metropolitan, the

Municipal, or the Tribune towers. When shall we learn its lesson of variety in utter simplicity?

FISKE KIMBALL

SPANISH DETAILS, DRAWINGS, PHOTOGRAPHS AND TEXT, BY WM. LAWRENCE BOTTOMLEY

"Spanish Details"* is a portfolio of 105 plates with descriptive captions, partly photographs and partly drawings and elevations to scale. It is more than supplementary to the volumes of Byne and Stapley. The plates, scales and dimensions should be valuable documents to anyone interested in Spanish architecture, whether gardener, sculptor, interior decorator or architect. As far as I know, no other book gives these data. The captions are intelligent and analytic. Some of the most interesting plates are from the Balearic Islands, notably

*William Helburn, Inc., New York, \$15.

the beautiful doorway of Plate 31. The history of these islands is peculiar and seldom remarked.

It is no doubt true enough for the purpose in view, as Mr. Bottomley says in his all too brief prefatory comment, that "the plan of a Spanish building is derived from two sources, ancient Rome and the Orient"; that "the characteristic qualities of Spanish architecture are its dignity, austerity and distinction contrasted with a romantic sense and vividness of imagination—large simple wall surfaces that bring out the rich concentration of decoration around doorways, windows and arcades." This does not mean that it is austere because Roman, and richly decorated because Oriental, or that the sole causes of his contrast are these two divergent sources. It is not so simple as that.

The patio or court, the high symmetrical rooms opening on the patio, the few windows (if any) on the street, are Roman, Moorish, Greek, in fact they are Mediterranean and Asiatic. Palaces in Crete and Babylon had these things, which sprang from the demand, first, for actual coolness, seclusion and defense; and secondly, for the kind of building that expressed or suggested these things.

But the Mediterranean climate is not all the same. Northern Italy differs from Central Spain in climatic effect almost as much as New England and Southern California; and if we have Ruskinian feelings about Italian baroque, and find baroque abounding in Spain; if accordingly Spanish ornaments seems to us heavy and coarse beside Italian; it may be because we have not assimilated the environment. The Spanish background is on a larger scale and of a sterner aspect—wide plains, bleak moun-

tains, burning sun. The heavy shadows and the strong contrast between sunlight and shadow, have some relation to this heavier decoration and its contrast with the plain spaces of wall. Italian climatic effects are not so glaring, and emphatic. It seems appropriate to the difference that the Italian language should trip more

lightly than the Spanish, with less sonorous weight, and even that the Italian peninsula should be more slender on the map. The Spaniard is perhaps more like an Arab than is any other European. He has a dry mountainous country, and a harsh climate both for heat and cold. "Ice, fire and hunger," says Havelock Ellis, "have tended to produce a tough and dry race, extremely sober, temperate in their physical demands, ascetic, stoical, practical, too familiar with work to idealize it, but with great reserves of energy."

The climatic

quality of New England has a certain refinement and delicacy about it, to which Colonial detail was related. Here is more suggestion in it of Italy than of Spain. Yet many characteristics of Spanish style would harmonize far better with the surroundings of the bold and austere coast of Maine than the thin delicate clapboard houses which look well further inland. There are practically no fine early American houses overlooking the sea, and probably Northern Colonial can not be made to look well in the rugged setting of the northern coasts. Spanish examples seem especially suggestive for architecture on such coasts. Indeed for outdoor living in courts or patios and gardens the features of a Spanish house connected with such living could well be adapted both in our town and in our country houses.

Mr. Bottomley's selections are made with a



Stairway in the Casa de las Duenas, now the palace of the Duke of Alba, Seville

certain consistency of feeling. Three-quarters of the examples are markedly simple and severe both in line and ornamentation, and in this leaning in his selection toward simplicity and restraint he doubtless had in view such values as might be suggestive to American architects.

Black and white plates give but a poor and partial idea of the real effect of Spanish architecture, for they leave out the color. One should go to Spain if only for the ironwork and the colored tiles. The tiled roofs are plain masses of color. Broken masses are in the designs of floors, in the decorated tiles, fountains and walls of patios and gardens, in outside staircases and the dados of loggias.

Mr. Bottomley's choices of subjects shows his love of this color, as well as of that imaginative detail. They are the selections of an architect, whose own work is imaginative and individual, to illustrate things that peculiarly interest him, such as the contrasts of massed decoration and plain spaces in the treatment of doorways (see Plates 29, 35, 36, 39, 40, 45, 46, 48, 50). In the matter of color, his captions are so good, that it is to be wished he had supplemented the black and white in this manner more extensively.

There is perhaps no country in Europe now so rich in unexplored suggestion as Spain. The Spanish influence in this part of America will perhaps be along the lines which Mr. Bottomley's emphasis of choice seems to indicate. In the contrast of massed design with plain surface; in a certain imaginative richness; in the increased taste for polychrome architecture; in respect to open air life in enclosed, or partly enclosed, courts and gardens; and, finally in respect to sea shore architecture.

ARTHUR W. COLTON

GREAT STYLES OF INTERIOR ARCHITECTURE, WITH THEIR DECORATION AND FURNITURE **BY ROGER GILMAN**

Just as there is more than one way of writing history, so is there of treating architecture, itself an historical record and evidence. The bare bones of history are essential, but until they are invested with a human aspect, they make but little impression upon us. In no small measure the same is true of architecture: we can of course admire its works for their sheer beauty alone, for particular qualities that appeal to the amateur or to the professional with his eye roving in search of plunder: there is little doubt, though, that when they speak to us of the lives once lived in and about them, of manners and ways and thoughts that caused them, our sensitiveness

to those beauties and qualities is both sharpened and made more discriminating. And of discrimination the architect of today, especially the American architect, forever borrowing from the past, has unlimited need.

Mr. Gilman, in his preface to "Great Styles of Interior Architecture," disclaims the tracing of historical development as a trespass on the field of architectural history. His aim is "to describe the styles from the point of view of design, to enable the designer to get the feeling of the style, to bring to the layman the designer's eye and mind," and he not improperly feels this aim to be new and inspiring. He has, however, at least in his picture of the growth of the French Renaissance and in his tracing of the development of English interiors from Tudor to Georgian, given no little sense of historical atmosphere, though with marked conciseness and no laboring of the point. That is, after all, but the fulfilling of his intention to lay before the reader "the human aims of the style and its underlying principles of design," otherwise accomplished very happily by the luminous analysis of the characteristic elements employed in each of the periods considered and the description of them and of their relation to each other in composition.

The book deals with secular architecture, public and private, excluding the ecclesiastical; Greek and Roman, because of their remoteness, and Gothic because of the meagreness of our information, are omitted. The field covered is that beginning just before the Renaissance and ending with the French Revolution. A most decided enhancement of the value and interest of Mr. Gilman's treatise arises from his account of the textiles used in connection with these interiors and of furniture that belonged in them.

The author's point of view in his discussion of the various styles is, as it should be, sympathetic; it conforms to the intention he expresses in his preface and to his proposition that "More and more it seems right that styles should be judged by their peers—and are not these their contemporaries? To their designers one may believe all styles were sincere and reasonable and beautiful, to the men in their streets even fascinating. To bring to the surface what their creators were striving for, to see them in the light of their own time, seems a finer thing than to condemn them half understood." A man capable of enunciating anything as intelligent as that is not one to write a dull book. He does not seem, any more than some of the rest of us, to have been swept from his moorings by the recent manifestations concerning the Baroque, but it cannot be said that he does not do it justice.

C. GRANT LA FARGE



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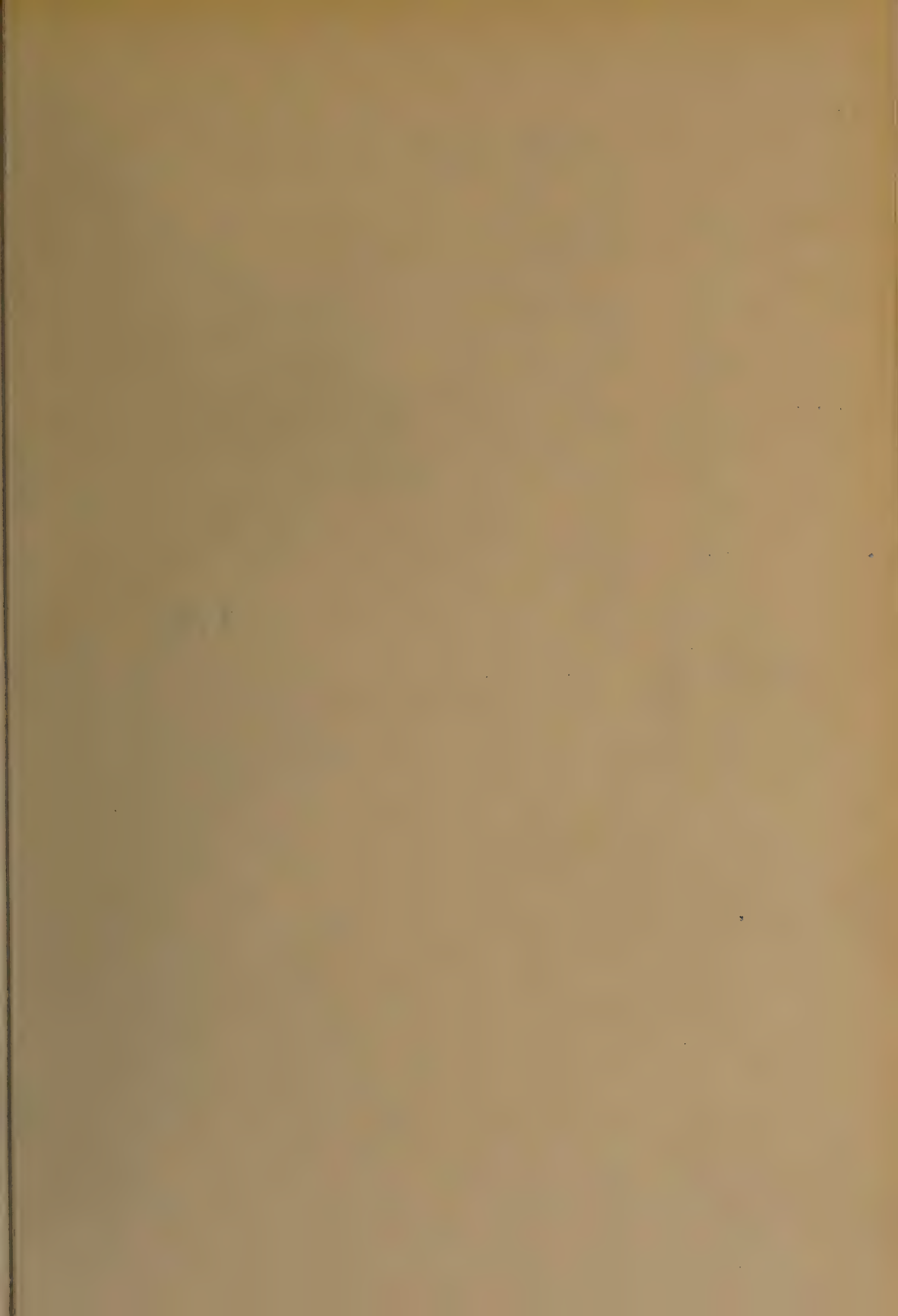
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THE CORNELL CRESENT
Gavin Hadden, Engineer

The ARCHITECTURAL RECORD

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The CORNELL CRESCENT GAVIN HADDEN, DESIGNER

By
Gavin Hadden

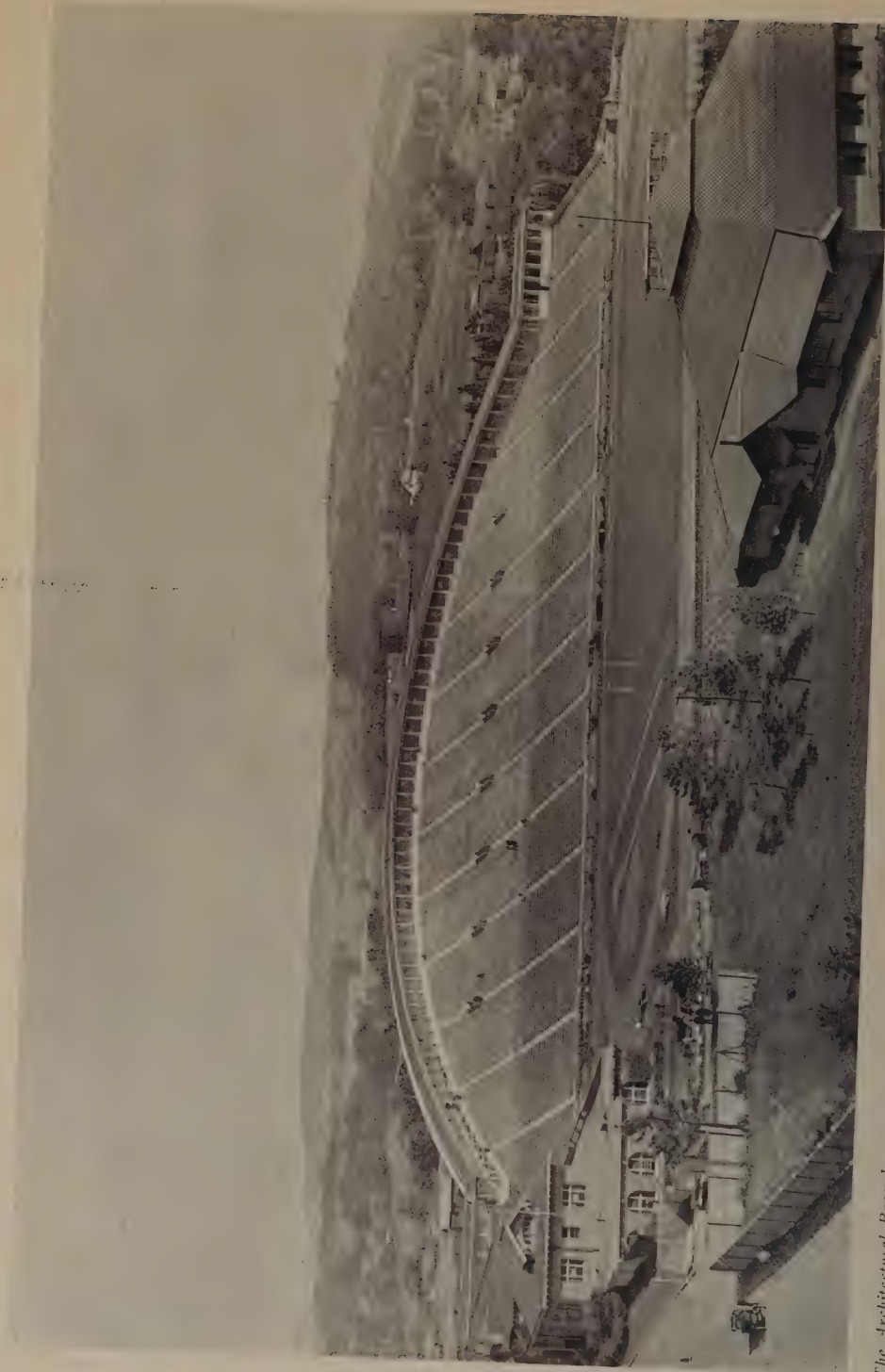
ON ACCOUNT of its departure from customary forms in the arrangements of its seats, and on account of its unusual general composition, the new athletic stadium recently erected at Cornell University, Ithaca, New York, has excited some interest among administrators of athletics, and also among architects and engineers. It is hoped that the brief description and exposition of the governing principles of the design, herein presented, will be an aid to discussion. The same general principles are applicable to other seating structures of this kind and are in fact being followed by the writer in other designs now being executed and in contemplation for future needs.

The field at which the structure has been erected is known as Schoellkopf Field, in memory of a former student at the University. Although the new structure was first called the Schoellkopf Field Stadium, appreciation of the advantage of a simple, but euphonious and distinctive designation has led to the general adoption by tacit agreement of the name "The Cornell Crescent."

The first permanent concrete seating

stand at Schoellkopf Field was constructed in 1915. At that time its seating capacity, about 9,000, was more than ample for the needs of the University and it was believed that a great many years would pass before additional seats would be required. The increasing accessibility of the city of Ithaca, however, largely on account of the automobile, and the increasing popularity of the game of football in general and of Cornell's games in particular, soon began to fill and overflow the old structure, and it became apparent that additional facilities for football were necessary.

When the writer was first called upon to tackle the problem, the point of saturation of the existing facilities had been reached. After making a study of the possibilities of the Schoellkopf Field site and of other totally different sites, with particular reference to probable future demands for seats, it was determined that the most advantageous and economical solution would involve the retention of the arena and running track substantially as before and the incorporation of the old stand in the new seating structure. Scenic



March, 1925

General View from the West
THE CORNELL CRESCENT
Gavin Hadden, Designer

The Architectural Record

and topographical considerations and the location of existing buildings necessarily restricted the major part of any new development to the one side of the field only. Perhaps it would be of interest to quote here in part from a statement of the problem as set forth by the writer two years ago:

" . . . the problem under consideration resolves itself into the determination of the most feasible, practical and economical design of a permanent new Stadium on Schoellkopf Field, to be used for football and track games, with an immediate capacity of 20,000 to 25,000 football seats and an ultimate future capacity up to the practical limits of the site.

"It is imperative that the proposed Stadium be constructed of permanent fireproof materials and that every required provision shall be made for the safety and comfort of spectators.

"It is desired that the proposed structure shall be of pleasing appearance, and shall in its architecture enhance rather than detract from the beauties of its surroundings.

"It is desired further that the beautiful and inspiring feature of the existing stand, which provides a far reaching view of the scenic effects of the surrounding country from most of the seats, shall be retained in so far as may be possible; and further, that if the existing parking spaces must be eliminated, a limited number of private boxes, suitably located, shall be substituted therefor."

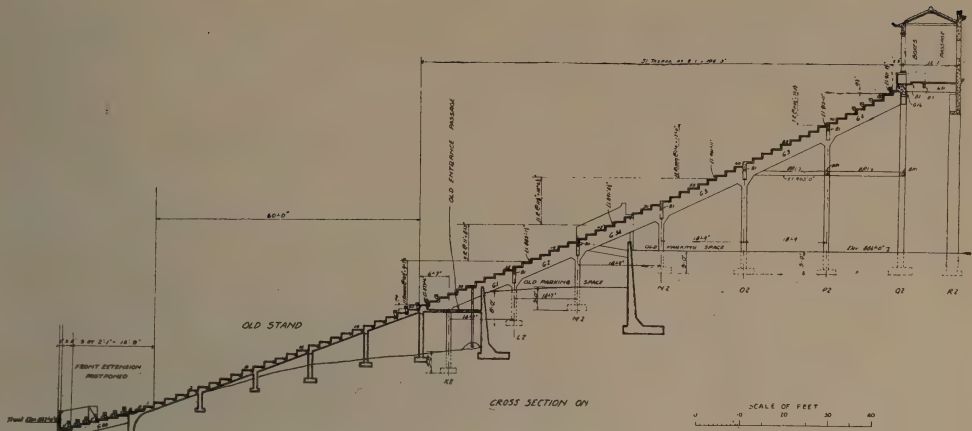
The low rectangular deck of the old stand has been retained and provided with new seats of different design, and a new deck has been extended upward, above and behind the central portion, until cut off in plan at the rear and sides by a circular curve centered on the center of the football field. The old automobile parking spaces, which were located on the hill above the retaining walls back of the seats, and the old entrance passage, have necessarily been discarded, thereby utilizing the large amount of space they occupied to far greater purpose. As a substitute for the parking spaces a number of private boxes have been provided in a covered colonnade at the outer peri-

phery of the seat deck. This colonnade descends on each side from the highest point on the center line of the structure and terminates at each end in a colonnaded wing built over the end of the old entrance passage. The portion of the colonnade which is not occupied by the private boxes is used for circulation of spectators to the seating sections and to the boxes. Entrance to the eight central seating sections is obtained through short ramps and portals from the high ground at the rear of the structure and to the other sections through the wings of the colonnade. The boxholders are also provided with two short private stairways which lead to the colonnade passage, one at each end of the boxes.

These general features can be seen in the accompanying plan and central cross-section. The drawings also show a front extension which has not yet been constructed but which has been designed to care for future expansion. Still further expansion, not shown on the drawings, will be provided for on the west side of the field.

The most distinctive feature of the general design is of course the rather unusual sky-line curve produced by the combination of the circular curve in plan with the logarithmic curve in cross-section. Geometrically, this curve may be approximately defined as the intersection of a logarithmic horizontal cylindrical surface with a circular vertical cylindrical surface. This sky-line curve is, however, merely incidental to the design, resulting from practical logic in its development. In fact, every detail of the design was arrived at through the logical process of adaptability to the best fulfillment of its purposes, with the belief that the proper development of this principle would in itself assure a suitable and satisfactory appearance. As W. R. Lethaby has stated, "The end of design is properly utility, fitness and delight. If a discovery, it should be a discovery of what seems inevitable, an inspiration arising out of the conditions."

The vertical curve of the cross-section follows what is now generally accepted as the best practice in the design of impor-



Cross-section on Center Line
THE CORNELL CRESCENT
Gavin Hadden, Designer

tant structures of this kind. The principle of continuously increasing the slope of tiers of seats as they rise upward from the arena has been followed frequently since the day the Coliseum was designed in Rome, and even the design of that very early structure shows some indication of it. By so doing, the clearance of the lines of sight is maintained at a constant average, and the total height of the structure is restricted to the minimum. Whereas, however, in some of the early classical structures and also in some few modern structures of the twentieth century, this increase in slope was attained by varying the dimensions of *both* treads and risers, the best modern practice, for uniformity of comfort, in the usual case keeps the tread dimensions constant and confines the variations entirely to the riser dimensions.

The circular curve of the plan follows naturally and logically from efforts to develop the design so as to place all the new seats as advantageously as possible for viewing the football field. From the very beginning of the American game of football it has been the universal wish of practically all football spectators to sit as nearly as possible on a line with the center of the field. With the development, particularly during the last decade, of the more open style of play as influenced

by the revised rules of the game, and with the increased size and consequent increased height of seating structures all over the country, it has been found and definitely proved by experience that the modern spectator prefers a seat high up in the stands, provided it is near the center line and not too far away from the field of play, to one lower down but farther away from the center line. These facts, together with the fortunate topography of the hillside site, with the highest ground opposite the central part of the field, are the fundamental reasons for the general plan followed.

The circular plan was not definitely fixed, however, without first giving careful consideration to various alternate approximations, following the same general line of reasoning. Tentative plans were drawn up and approximate estimates were made of two alternates, termed for identification the "Rectangular Plan" and the "Semi-Octagonal Plan." The first of these consisted of simple rectangles giving the very roughest approximation to the circle. The second, formed by two long side diagonals, and a long rear wall parallel to the seats, approximated the circle reasonably closely. In both of these designs the colonnaded ramp was omitted, and the private boxes were located on the straight line at the topmost



Detail of Rear Wall with South Wing of
Colonnade in Background

THE CORNELL CRESCENT

Gavin Hadden, Designer

rear of the structure. A small tower was located at each end of the boxes to enclose the stairways to the box passage and also to serve as suitable terminations to the long straight outside walls.

The results of this comparative study, influenced as they were by the particular conditions of the specific problem, indicated the undoubted superiority of the circular plan over the others. Under other influencing conditions one or the other of these alternates might have been indicated, and it may be noted that the plan of the new Brown University Amphitheatre, now under construction in Providence (to be erected in duplicate on both sides of the field) is quite similar in general features to the "Semi-Octag-

onal Plan" described above. This Brown University design was developed after that of the Cornell Crescent.

In treatment of the details of the design, it was realized that the greatest simplicity was desirable, not only in order to conform most suitably to the materials of construction, reinforced concrete, but also in order to accentuate the distinctive sky-line curve. The curved exterior wall is pierced by simple Roman arches for entrance and exit of spectators and for the admission of light and air to the large open spaces under the deck. Above each is a simple rectangular window in the exterior of the colonnade above the deck. These windows admit light and air to the boxes and passages, and through them may be obtained many glimpses of the surrounding landscape, each in a new direction. These arches and windows, which in their general relative combination follow frankly the noteworthy precedents of the upper stories of the Coliseum, the Amphitheatre at Pola, and the Harvard Stadium, follow the crowning curve in ascent and descent on either side of the center line. Thus, and also by their vertical lines, they serve to accentuate this curve on the exterior side of the structure. The colonnade columns serve in the same manner on the interior or field side.

The crowning curve is further accentuated on the field side by the touch of color introduced in the red Spanish tile roof of the colonnade, matching the roofs of Schoellkopf Hall and the baseball cage and serving by similarity of color combination to increase the homogeneity of this athletic group.

At night, by the diffused illumination of the entire colonnade, the salient features of the structure are again brought out. The colonnade and the column capitals are dimly outlined by indirect light which serves the useful purpose of guiding outgoing spectators after a late game on a dark day, or on occasions when the structure is used at night.

What may be termed the only purely ornamental features in the entire structure are the two circular cartouches, of quite simple yet pleasing design,



Detail of Colonnade and Seat Deck
THE CORNELL CRESCENT
Gavin Hadden, Designer

placed in the exterior wall on either side of the central arch and the line of flag poles surmounting the wall. The former, carrying the seal of the University, reinforce the unity of the structure by indicating anew the transverse centerline as a focal point for the eye, and the latter, as inconspicuous as possible, carry gaily colored flags and banners, adding in this way further life to the structure when filled with spectators.

The accompanying photographs show some of the more interesting views of the structure, but it is a noteworthy fact that on account of its composition each different angle of view shows it in a different aspect.

In the design of the structural details the column, girder, riser beam and tread slab method has been mainly followed, according with what may now be considered

the generally accepted practice for reinforced concrete structures of this kind. Sliding instead of butt joints, however, are introduced to take care of expansion and contraction in the seating deck, thus preserving almost complete uniformity in the longitudinal spacing of columns and girders. The design of the old deck, the method of connection with the old structure, and the curved exterior wall also had important effect upon the determination of the column and girder spacings. It is not possible to enter here into any detailed description of the structural design, but it may be of interest to enumerate some of the more interesting features and those which are perhaps somewhat unusual.

First among these features should perhaps be mentioned the design of the piers between the exterior arches. These piers

reach a considerable unsupported height at the center of the structure and their "U" section not only is efficient in economy and stability but also serves, by the counterforts which form the legs of the "U," to increase in depth the reveal of the arches. The result is an appearance of great strength and solidity in the exterior wall, and thus in the entire structure, which is usually difficult to obtain economically with reinforced concrete.

Another feature is the seat design, a further development of the design first carried out after long study and experiment in the Franklin Field Stadium in Philadelphia. Slat seats of cypress are raised above the concrete treads, supported on special castiron brackets fastened to the risers. By allowing foot-room under the preceding seats and room under their own seats for spectators' feet and legs, double use is made of the horizontal area occupied, and the design is believed to be the best possible compromise between comfort and economy for seats of this type.

Other interesting features are the expansion joints between the old structure and the new, the expansion joints between the different parts of the new structure, the method of framing under the colonnade, the concrete slab and tie-beam design of the colonnade roof, the portal framing, the method of fastening the seat brackets to the old part of the deck, the design of the ornamental colonnade columns to provide for the maximum variation in height entirely below the entasis, and the arrangement of the interior bracing to provide large areas with ample headroom for practice of outdoor sports under cover when necessary.

The expansion joints in the deck itself, where there are no heavy concentrations of load, are sliding joints as noted above, but in the colonnade, with its comparatively heavy concentrated loads, through butt joints with split columns and girders have been introduced. For simplicity and appearance these through joints are located radially. The motion in expansion and contraction is therefore not perpendicular to the joints and some rather interesting slight variations in elevation and

alignment of the adjacent curving surfaces have occurred after contraction. This led to the design of a special type of cover for the joints in the sloping floor of the colonnade ramp, consisting of cast-iron pieces similar to a standard type of door sill, with fins projecting beneath set in the joints loosely, thus allowing them automatically to adjust their position to the movement of the concrete.

No appreciable new loads have anywhere been added to the old part of the structure, except at the two wings. The north wing rests directly on solid wall foundations, and the south wing has been underpinned with new columns to take the additional loads of the colonnade walls, columns and roof.

The contract for the construction of the Crescent was signed in December, 1923. The work through the winter was confined principally to preparation, the erection of plant, the excavation for the footings, the cutting of old concrete, the hauling of materials, and the construction of forms. As the weather allowed, with proper cold weather precautions, the footings were poured, and in April, 1924, the construction of the superstructure went forward smoothly and efficiently, following almost exactly the tentative progress schedule set by the contractors.

On account of the difficulty which had previously been experienced in Ithaca in obtaining satisfactory results with concrete made of local materials, even more than the usual care was exercised by the contractors in the selection and proportioning of the materials for the aggregate. In reinforced concrete structures of this kind, with comparatively thin sections of large area completely exposed to the weather, nothing but the most careful standards should be allowed in the quality of materials and workmanship. The responsibility of the owners, designers, supervisors and builders to the general public which uses the structure in all seasons cannot be disregarded.

Although the curves of the exterior wall and colonnade added some complications to the detailed design and to the survey work in laying out lines and grades, it did not present difficulties in



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Detail of Rear Wall at Center Line
THE CORNELL CRESCENT
Gavin Hadden, Designer



The Architectural Record

Detail of Colonnade and Upper Part of Seat Deck
THE CORNELL CRESCENT
Gavin Hadden, Designer

March, 1925



General View from the North
THE CORNELL CRESCENT
Gavin Hadden, Designer

the form construction which could not be readily overcome by skillful work. The curves are confined entirely to the outer perimeter of the structure, and as they are of long radius it was not a difficult matter to bend the form boards and cut the wales to the proper surfaces. Every member in the entire structure was cast in place, with the exception of the tie-beams of the colonnade roof, which were pre-cast. The faithful accuracy of the results reflect great credit upon the skill of the contractors and the efficiency of their organization.

The introduction of any longitudinal construction joints in the new deck was definitely prohibited. The general procedure in construction therefore was to pour the deck in comparatively narrow sections, each in a single day's work from bottom to top. The first sections poured were those at and adjacent to the transverse center line of the structure and, with two complete sets of deck forms, each two bays in width, the work progressed at either side from the center to the ends. This procedure allowed the excess forms at the top to be cut off progressively as the structure decreased in height, and had the further advantage of reducing to a minimum the amount of form construction necessary during the progress of the work. The erection of the exterior wall with its arches and piers,

and the colonnade walls, floors, columns and roof proceeded independently, following in successive steps after the deck sections, the wall and pier forms being similarly cut off progressively at the bottom. The last concrete was poured in the structure on August 27, 1924, and the entire project, including the seats, the temporary toilets (which will be eventually replaced by permanent facilities included in the original plans), the tile roof, the pipe railings, and the installation of the drainage, plumbing and lighting systems was completed in ample time for the use of the structure for the first football game of the season on September 27, 1924.

It should be noted that whatever utility, distinctiveness and beauty may be ascribed to the Cornell Crescent are due to the broadmindedness and courage of the official representatives of Cornell University and of the Athletic Association who took the responsibility of carrying out the project. The construction was carried out by the Turner Construction Company, with Mr. R. F. Egelhoff as General Superintendent and Mr. J. E. Pearson as Superintendent, and the design and supervision of construction were carried out by the writer with Mr. C. A. Holden in charge of the detailed design, and Mr. G. F. Baker in charge of the resident supervision.



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Entrance Detail
HOUSING DEVELOPMENT OF THE BAYONNE HOUSING CORPORATION AT BAYONNE, N. J.
Andrew J. Thomas, Architect

A STEP TOWARDS SLUM CLEARANCE

*The Garden Tenement of the
Empire Mortgage Company on
the East Side of New York.*

By John Taylor Boyd, Jr.

THIS HOUSING venture of the Empire Mortgage Company, designed by Andrew J. Thomas, although not large in scale, nevertheless has a place in housing progress. Historically, it signals the introduction of the garden tenement into Manhattan's Island, where land is expensive, and it brings housing nearer that long-sought goal—clearing the slums.

Slum clearance is no new idea, nor is it revolutionary. In Europe, the largest cities have undertaken slum clearances on a large scale, and London particularly has been methodically scrapping its slums for a generation, in a series of colossal operations, providing as many as thirty thousand homes in a single project. The latest London slum clearances involve the building of whole new cities, including not only housing, but public engineering works and the necessary schools, hospitals, and other public buildings as well—all designed and constructed according to the finest architectural standards.

Recently, the supervising architect of the London County Council, which administers this work, visited New York and described it to audiences of architects and civic bodies. American architects are somewhat chagrined at these striking evidences of British achievement, beside which our own best efforts seem small. Mr. Forrest, however, pronounced our housing standards, as seen in the garden tenements of the Metropolitan Life Insurance Company and of the Bayonne Housing Corporation, as superior technically to the more recent British projects. One would think therefore, that, if American architecture has created a tenement house design which is technically superior to English practice, American business initiative should produce this architecture on a big scale. This is but another illustration of the truth that the difficulty in providing wage earner's hous-

ing is no longer architectural, but social and financial.

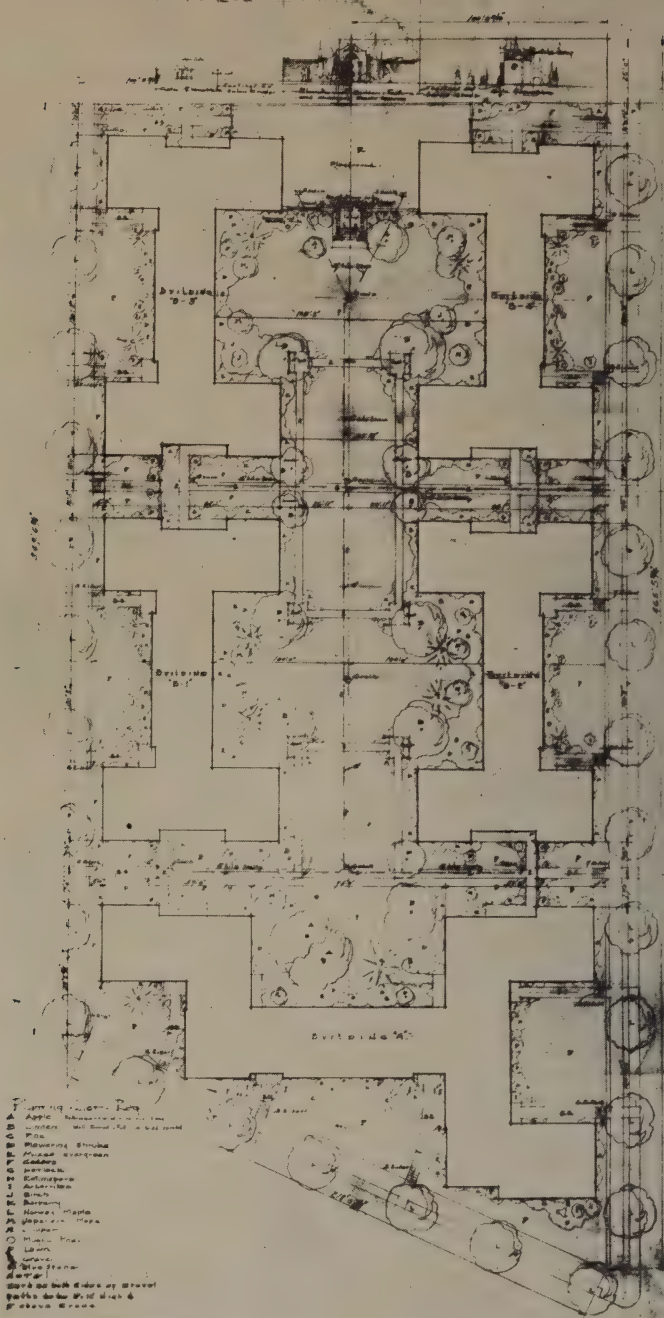
Financially the new British housing of the London County Council is significant. Much has been printed lately by housing experts about the financial disasters of all post-war British housing, but Mr. Forrest had a different story to tell in this one instance at least. At a gathering of the Architectural League, Mr. Forrest, in reply to questions asked by Mr. Cass Gilbert and others, said that the London housing was not "economic"—that is, it was rented at a loss, which was borne by the tax-payers—but that the loss, which a few years ago equalled about fifty pounds for each family housed, had been brought down to only five pounds a family.

In this simple statement of a five pound loss in London's slum clearance, per family housed, there lies a big truth. Ten thousand of the vilest slum homes replaced by the government at a loss of less than \$250,000! Here is a proposal which might be justified as a sanitary measure on the grounds of a necessary public improvement, no more revolutionary nor "socialistic" than the construction of a new sewer or subway would be!

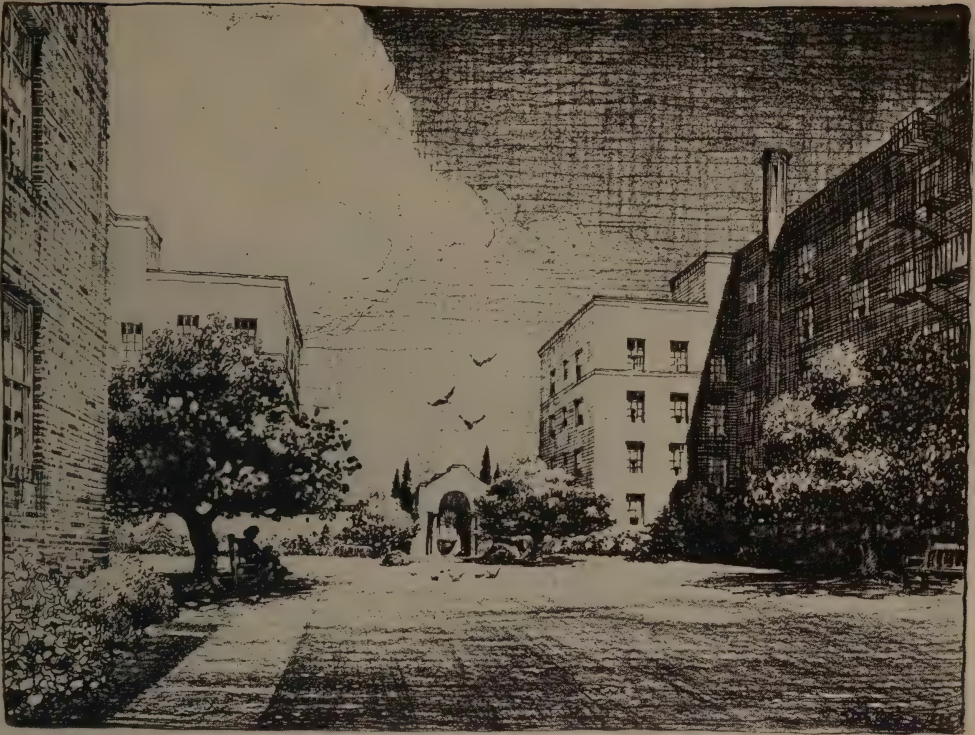
Such an achievement will make the advocates of government action take heart. They could easily show that the initial loss of a quarter of a million dollars in the case illustrated would soon be made up by the increased taxes derived from the new improvement, to say nothing of the social and sanitary gain which would result from the removal of a breeding-place of disease and discontent. Clearly, Mr. Forrest's efficiency has brought a new factor into city housing. He has strengthened the case for government interference in the most effective way, namely, on the side of the dollar. And we may well ask whether he has not in a measure put the burden of better

PLANTING PLAN

BAYONNE HOUSING CORPORATION
 Andrew J. Thomas, Architect
 Sheet 5



- Legend
- A Apple
 - B Beech
 - C Birch
 - D Flowering Shrub
 - E Flowering Shrub
 - F Flowering Shrub
 - G Flowering Shrub
 - H Flowering Shrub
 - I Flowering Shrub
 - J Flowering Shrub
 - K Flowering Shrub
 - L Flowering Shrub
 - M Flowering Shrub
 - N Flowering Shrub
 - O Flowering Shrub
 - P Flowering Shrub
 - Q Flowering Shrub
 - R Flowering Shrub
 - S Flowering Shrub
- Scale 1" = 20'



View of Center Garden

HOUSING DEVELOPMENT OF THE BAYONNE HOUSING CORPORATION AT BAYONNE, N. J.

Andrew J. Thomas, Architect

housing squarely up to private initiative. Too many people conceive of "private initiative" as meaning principally "privacy," whereas it really means "initiative." It is the failure of private initiative which has led publicists like Mr. Herbert Croly to advocate government action, as he very ably did in an editorial published in the *Record* last year. Nor can the problem of wage-earner's housing be ignored by claiming that there is no longer a housing shortage. Here again, general claims cannot be proved. Whatever the conditions are in the higher-priced real estate markets the fact is that, in northeastern United States new housing of the speculator's types cannot be produced at the present time at a cost of much less than \$1100 a room, and that this housing cannot be rented at less than \$10 a room a month, which means at least \$12 to \$13 for the individual and two-family types

where the tenant furnishes his own heat and hot water. Not only is this true, but, in the last two years, rents in many of the old pre-war houses have risen well to the point of rents in new construction, even of the garden tenement type. In 1923, an investigation made by the *Evening World* disclosed this situation in the East Side of Manhattan, where rentals in slums of the worst and slightly less worse types ranged from \$8 to \$10 or more, usually without heat or hot water. This evidence is borne out by other sources. There are still localities in Greater New York where "cold water" flats may be had for \$5 or \$6, but along with such reports go stories of factories leaving the district because their workers cannot live there under decent conditions.

In other words, the poorest homes in old houses are now being rented at prices not much lower than the new \$9.00 a

PLAN OF 2ND, 3RD, & 4TH FLOORS

ANDREW J. THOMAS
ARCHITECT
15 EAST 47TH STREET
NEW YORK CITY

Typical Floor Plan of Typical Unit

HOUSING DEVELOPMENT OF THE BAYONNE HOUSING CORPORATION AT BAYONNE, N. J.

Andrew J. Thomas, Architect

room a month tax-exempt garden tenements of the Metropolitan Life Insurance Company or the \$10 average of the Bayonne Housing. This rise in rents in old construction to the level of those in new construction is a familiar situation in economics, but, since it is a gradual process, it has enabled society to dodge the housing issue. The issue is, that American industry was able to house its average thrifty wage-earner in decent homes before the war, and it must continue to do so if the nation is to prosper. Specifically this means that housing must be provided in quantity to rent for not more than \$10 a room a month, and that this figure must be reduced as rapidly as possible to \$9, then to \$8, and perhaps even lower.

This is the duty of American business leaders, and fortunately they are awakening to it. Within the last two years they have made striking contributions to the cause of better housing, and there are indications that the success of these ex-

periments will beget many others. The enterprise of the Metropolitan Life Insurance Company has inspired other examples. The advance made over previous projects in this huge project of 2125 homes, was treated at length when construction was started in THE ARCHITECTURAL RECORD (Aug., 1922, "A New Departure in Housing Finance"). The Metropolitan housing has proved successful beyond the expectations of its promoters. It has been in operation nearly a year, has acquired a waiting list of over 27,000 names, and according to the official statement of the life insurance company, is earning 8% at least on the outlay—a satisfactory return for a conservative mortgage institution. When the Metropolitan scheme was proposed, many prominent housing, real estate, and construction experts, after examining the plans and specifications, declared that "it couldn't be done."

Before the Metropolitan Life Insur-



The Architectural Record

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Playground for the Smaller Children
 HOUSING DEVELOPMENT OF THE BAYONNE HOUSING CORPORATION AT BAYONNE, N. J.
 Andrew J. Thomas, Architect



Exterior of Group

HOUSING DEVELOPMENT OF THE BAYONNE HOUSING CORPORATION AT BAYONNE, N. J.

Andrew J. Thomas, Architect

ance Company had completed its housing, the Bayonne Housing Corporation, of Bayonne, N. J., undertook to produce a demonstration of ideal wage-earner's housing. This Bayonne housing indicates the re-awakening of big business to the housing situation, which had interested it all over the country at the time of the war, when some three-score semi-public housing corporations were founded in various cities, usually under the auspices of the local chambers of commerce, for the purpose of providing better housing. I treated at length of this activity in *THE ARCHITECTURAL RECORD* for November and December, 1920—"Some Principles of Housing Finance." Although the movement had great promise, the sharp rise in construction costs after the war discouraged most of the projects. A few, however, succeeded, generally providing housing of the individual and row types.

The Bayonne Corporation, after a long study, went ahead last year with a large group of garden apartments, designed by Andrew J. Thomas. The stockholders of the Bayonne Housing Corporation include some of the strongest interests in America—the big oil refineries, Standard, Tidewater and Vacuum, the American Radiator Company, the Pacific Coast Borax, and the International Nickel, acting under the auspices of the Bayonne

Chamber of Commerce. The president of the company, Mr. George E. Keenan, deserves a place in housing history for his persistence in the face of many obstacles. In his efforts he received the support of the corporations who were stockholders, in particular the officers of the Standard Oil and Mr. and Mrs. John D. Rockefeller, Jr.

The Bayonne housing sets the standard for wage-earners housing higher than the Metropolitan Life's garden tenements. It covers only 36% of the area of the site (the land value being not very different) as compared with 51%, and, although not enjoying exemption from municipal taxes over a period of 9 years as does the Metropolitan, it rents for an average of about \$10 a room a month. Equally great is its advance on the social side, since it is a joint enterprise of capital and labor and public-spirited citizens and city officials, working out a solution of the local housing problem, and setting an ideal standard. What a different method is this from the old "company housing" where the capital-labor strife is superimposed on the landlord-tenant relation, a brew which has been responsible for some of the most unsavory episodes in American industrial history!

Another interesting development has been the founding of the City Housing

Corporation in New York last year, by a group of citizens under the presidency of Mr. Alexander A. Bing, one of the ablest real estate operators in New York. It is a limited-dividend corporation, resembling the City and Suburban Homes Company. The company has acquired a huge tract of land in Queens, and its first group has been completed, consisting of single-family, two-family and cooperative apartments, covering 28% of the site area. It is selling the homes on a first payment as low as 6% on the purchase price, with a "carrying" charge of \$10 a room a month which covers not only interest and amortization, but also taxes, water and insurance, these last being items usually left to the tenant-owner in individual and two-family types. In this financing, the housing enjoys exemption from municipal taxes for a period of eight years.

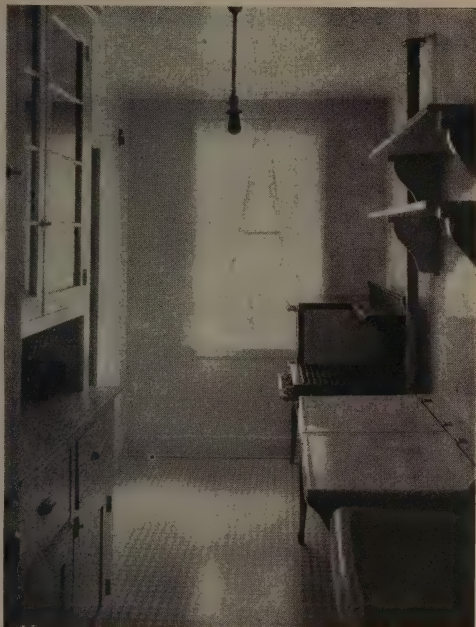
Considered from the point of view of slum clearance, all these latest housing projects are alike in one respect: they are



Typical Living Room

HOUSING DEVELOPMENT OF THE BAYONNE
HOUSING CORPORATION AT BAYONNE, N. J.

Andrew J. Thomas, Architect



Typical Kitchen

HOUSING DEVELOPMENT OF THE BAYONNE
HOUSING CORPORATION AT BAYONNE, N. J.

Andrew J. Thomas, Architect

built on low-priced land. This fact has led many experts to argue that the garden tenement cannot be produced in the congested districts where land value runs from \$10,000 to even \$50,000 for a 25 by 100 foot lot. They did not believe Mr. Thomas' demonstration of the solution of this problem which he published in *THE ARCHITECTURAL RECORD* in November, 1920, "Is it Desirable to Re-model the Slums?" This article, with the ideas there set forth, has proved to be the basis of nearly all subsequent progress in tenement housing, particularly the development of American technique in slum clearance. Briefly, Mr. Thomas' thesis is that high land and property values can be written off in slum clearance in just the same way that they are written off in other types of buildings—office buildings, hotels, clubs—by the higher rental to be gained from using the business sites in the cleared area, principally in the form of stores. There is nothing revolutionary in this proposal.



Typical Bedroom

HOUSING DEVELOPMENT OF THE BAYONNE HOUSING CORPORATION AT BAYONNE, N. J.

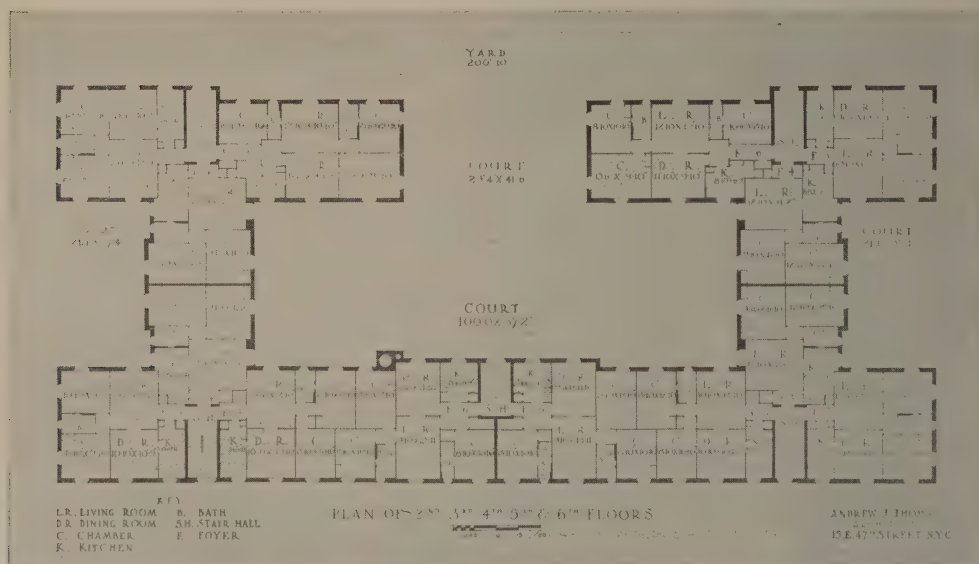
Andrew J. Thomas, Architect

It is being adopted in the more luxurious apartment houses in New York, it has long been known in some speculative housing, and, nearly fifty years ago, Mr. Alfred T. White, the promoter of the first model tenements in America, in building one of his groups in Brooklyn, took advantage of his business sites to plan stores on the ground floor of the tenement, which have helped to make the

project prosperous to this very day. "High property values in slum districts are due to business possibilities, not to tenement rentals," declares Mr. Thomas.

Last year Mr. Thomas produced another demonstration of the financial side of slum clearance, thereby bringing up-to-date, in a detailed study of a specific problem, his original thesis which he made on that subject for THE ARCHITECTURAL RECORD four years ago.

To prove that new garden apartments could be built to rent for \$10 a room on \$50,000 land value—this was the task that the Editor of the New York *Evening World* put up to Mr. Thomas. The editor picked out for this experiment what are probably the four worst and most expensive contiguous slum blocks in New York, those contained within Grand, De Lancey, Christie and Eldridge Streets, on the lower East Side of Manhattan. He obtained for Mr. Thomas the approximate market price of every real estate holding in the four blocks. The existing tenements occupy 81% of the site area and house 1,003 families in 3,399 rooms. Working with this actual condition, Mr. Thomas showed how the old tenements



Typical Floor Plan

GARDEN TENEMENT OF THE EMPIRE MORTGAGE COMPANY ON THE EAST SIDE OF MANHATTAN ISLAND

Andrew J. Thomas, Architect



View of Exterior, Interior Garden, and a Playground for the Smaller Children
GARDEN TENEMENT OF THE EMPIRE MORTGAGE COMPANY ON THE
EAST SIDE OF MANHATTAN ISLAND

Andrew J. Thomas, Architect

in these four blocks could be replaced by twenty six-story apartment buildings of the Metropolitan type, containing 4,230 rooms and housing 1,012 families, and having 112 stores, built at a cost of \$45 a cu. ft., and covering only 52% of the site area, and rented for \$10 a room a month with a 7% investment return.

Obviously, this new demonstration of the economic possibilities of clearing the slums in the very heart of the most congested tenement districts of Manhattan Island is a big advance towards slum clearance. Indeed, it is entirely possible that action might be forthcoming to clear the slums on a huge scale, were there not still one more obstacle in the way.

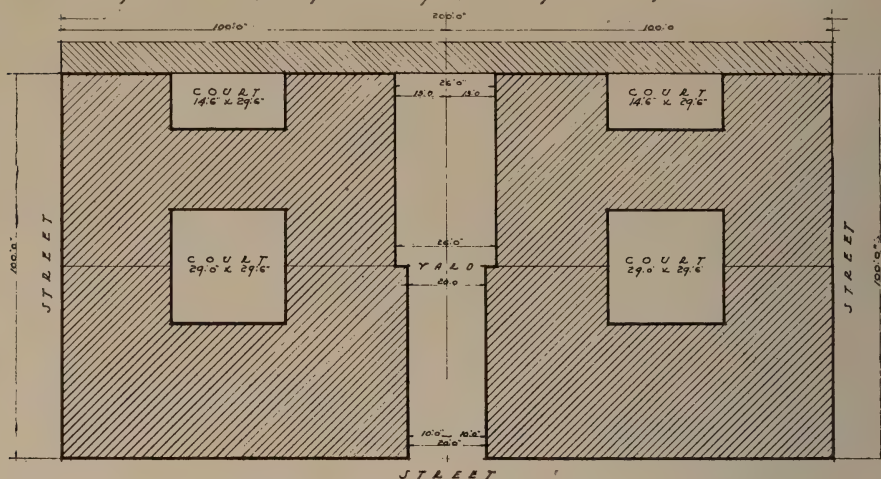
The only obstacle to slum clearance remaining is the legal one. There is no legal machinery for condemning insanitary, depreciated tenement houses and turning the areas over to a semi-public agency like the Bayonne Housing Corporation to be re-built with garden tenements. Without such legal powers of condemnation, it is not practicable, as any real estate man knows, to assemble whole city blocks. No housing corporation could

afford to tie up its capital in acquiring large areas piecemeal, and even then it might not succeed, because individual owners could hold out the best business sites, which are necessary both to the financial side of slum clearance, and to the architectural design of the garden apartment. Here, again is but another instance of the important truth that the old custom of real estate ownership in small parcels is made obsolete technically in cities by the progress of architecture and city planning. Nearly all types of modern buildings are unsuited to the small land sub-division, and sooner or later this fact must be realized and changes made accordingly.

Meanwhile, notwithstanding the legal difficulty, the advocates of slum clearances are not idle. This new project on Avenue "A" is evidence of their faith. It is undertaken by the Empire Mortgage Company, but the New York press has ascribed the project to Mr. John D. Rockefeller, Jr., who has not denied the report.

The new project will serve admirably to focus public attention on slum clearance, although in itself it is not a large

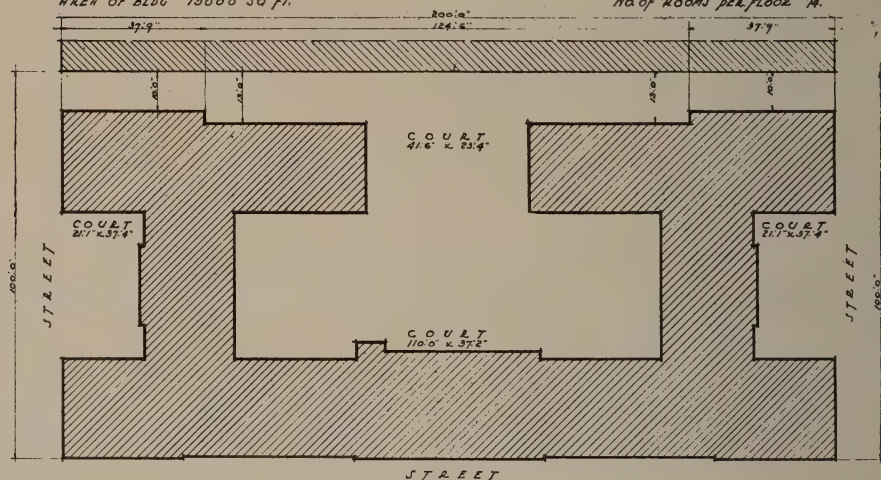
COMPARISON OF EMPIRE MORTGAGE COMPANY'S NEW PLAN WITH PLAN OF THE SPECULATIVE BUILDER



THE SPECULATIVE TYPE

AREA OF LOT 20000 SQ. FT.
AREA OF BLDG 13000 SQ. FT.

PER. OF LOT OCCUPIED 75%
NO. OF ROOMS PER FLOOR 74



AREA OF LOT 20000 SQ. FT.
AREA OF BLDG 11000 SQ. FT.
PER. OF LOT OCCUPIED 56%
NO. OF ROOMS PER FLOOR 70

EMPIRE MORTGAGE COMPANY

ANDREW J. THOMAS
ARCHITECT
15 E. 97th ST. N.Y.C.
Dec. 12 1929

The Architectural Record

March, 1925

Comparative Plans
GARDEN TENEMENT OF THE EMPIRE MORTGAGE COMPANY ON THE
EAST SIDE OF MANHATTAN ISLAND

Andrew J. Thomas, Architect

scale enterprise, and it suffers certain handicaps which can hardly be avoided in view of the extremely limited choice of large available sites in the heart of New York. The chief drawback is that the land is valuable, because it is a site for a large institutional building rather than stores. The store sites in the block on which the new project is situated are found at the other end, on First Avenue, which is a thriving avenue of trade and transportation, having good possibilities for commercial rentals. The project, therefore, cannot benefit from stores. This is another proof of the principle that the unit of housing is the city block, financially as well as architecturally.

For these reasons, a \$10 rental in the new project will hardly be possible. But even at a \$12 rental, it will reach a small percentage of wage-earners who are paying more for inferior homes, and it will be a bargain as compared with the two-family houses of shoddy construction in the outlying districts of Greater New York, which are being sold by speculators to wage-earners.

Architecturally, the building requires little explanation. Its economy of design is illustrated by the diagram of comparison of floor plan with the floor plan of the speculative type. A monumental feature of the design is the big garden court, which runs across the block, instead of longitudinally, as it would if the project included the whole block. The recessed courts on the side streets give openness and architectural interest to the street front. Perhaps the most novel point of the design is the small playground, in the form of a sunken garden, located in the rear yard, on a lower level than the garden. This playground feature Mr. Thomas introduced into the Bayonne housing. It is intended for the little children, taking them out of the streets from under the wheels of the automobiles.

This description of the Empire Mortgage Company's garden tenement brings the story of the efforts toward slum clearance in New York City up to the present time. One should not suppose, however, that slum clearance is the sole object in housing progress. There is a

strong body of opinion that the best method is to push the construction of garden housing in outlying sections of cities, where cheap land may be had within the limits of the 5-cent fare. Mr. Clarence Stein, who is Chairman of the N. Y. State Commission of Housing and Regional Planning, as well as architect of the City Housing Corporation, inclines to this view. Mr. Stein and the architects who agree with him, do not, be it understood clearly, share the unthinking views of some that the slums, having always existed, are a sort of necessity. He feels that the slums are a disgrace, not only the old ones, but also many of the newer housing which is still legal in New York, and which eventually would degenerate into slums. Mr. Stein's view is simply that the housing problem is so huge and so complicated, that there is room for more than one attack; that the method of building on outlying sections has been proved a success; and that this method is the easiest point of attack. Lastly, Mr. Stein points to European experience in slum clearance which has lately been turning towards this policy, the London schemes being largely suburban.

Here we have the clash of two schools, one which would directly attack the slums, and the other which would overcome them by a long flanking manoeuvre. It is not necessary to side with either school, since both are indispensable to housing. This paper deals with the clearance side, since the other side, which leans towards the garden city ideal, has been fully placed before the architectural profession in other articles.

Although interested in slum clearance, I greatly admire the garden city ideal. It has inspired the whole outlook on housing, and its theme of decentralization is an excellent policy, to be pursued wherever possible. But I do not believe that the garden city ideal should be taken too literally, because I doubt how far it rests on a fundamental analysis of the city. What is a city? What makes a city grow? What causes a city to arise in a given spot on the earth's surface?

Here are questions which need to be satisfactorily answered. It is understood

that the City Plan of New York, now being prepared by the Sage Foundation, will deal with these questions in exhaustive reports, and it is to be hoped that these researches and the resulting analysis will throw a clearer light on the character of a modern city.

Meanwhile, in default of such an analysis, the critic may point to certain significant facts. New York City—and other centers—is big, probably because it is a strategic transportation centre, a point where meet the chief trade routes of sea and land of the Western Hemisphere. This focal point acts as an attraction to millions of men and their activities, and a large part of their activity prospers through personal contact, a fact which causes concentration. Since New York is primarily a fine natural site for a seaport, it is topographically handicapped as an architectural site, since the water avenues cut the city in all places. Because of these conditions, congestion must be reckoned with. Even if we admit that the housing areas can be dispersed to the outskirts, to garden cities, there will always remain a huge body of workers who should be housed within walking distance of their work. In any great city, there are hundreds of thousands of men and women who work long hours, or are part time workers, who cannot spare the time required for commuting. But, what-

ever is the true effect of these factors, the main point is, that it may be some time before big cities in their present form, like London and New York, can be placed in the discard.

This, in brief, is the view of those who are urging slum clearance as a parallel policy to that of building on the outskirts. They feel that certain large housing areas should be provided near the centers, and that those which are slums should be put in order and not be allowed to remain plague spots for generations ahead.

But, whatever school one believes in, there can be no doubt that housing for wage-earners—of whatever type it is, so long as it is a sound type—can only be produced successfully on a scale big enough to include within the housing operation, all the possibilities of business income which the buying power of the people housed creates. When the cream is skimmed from tenement housing, as at present, housing is in the same primitive economic state as the meat industry was before the packers developed their intricate system of utilizing the by-products of the steer, sheep and pig.

With such impetus, and with the strides made in architecture towards perfecting the garden tenement, as exemplified in Bayonne, the lesson of the Empire Mortgage project will not be lost. Slum Clearance must press on to the goal.

PAST WRITINGS ON MEDIAEVAL ARCHITECTURE

By
Charles H. Moore

THE LITERATURE of mediaeval architecture now bulks large and is daily increasing in volume, but it calls urgently for critical examination and correction; for it abounds in mistaken affirmations and groundless conjectures, which not only bewilder the novitiate student, but greatly mislead him. In the early decades of last century, when this literature began to take form, there was naturally little competence on the part of writers to deal with the subject. For since the so-called Italian Renaissance, mediaeval architecture had long been overshadowed in popular esteem by what was thought to be a revived classic art, and when at length some interest in the surviving monuments of the middle ages began to awaken, there was no knowledge of their origin, their history or their principles to guide in the study of them. The writers were like mariners at sea without chart or compass, and did not perceive that in order to gain right understanding of the manifold styles confronting them, their first task must be to examine and compare the buildings with a view primarily to their respective modes of structure. It is important to note, too, that these writers handicapped themselves by a patriotic bias, which precluded that impartial spirit which is an indispensable condition of right approach to any subject. This bias is particularly marked in English writings, most authors of that country starting with a claim for their own country of superior merit and priority of achievement, as a few typical examples will show.

Rickman, for instance, one of the foremost of English pioneers in the field, begins his *Attempt to Discriminate*

the Styles of Architecture in England (first published in the year 1817) by saying: "The Science of Architecture . . . may be said to treat of the planning and erection of edifices, which are composed and embellished after two principal modes: 1st, The antique, or Grecian and Roman: 2nd, The English or Gothic." The writer offers no evidence in support of an English origin of what he calls Gothic, but says (p. 37): "In a work like the present, there will be little propriety in a lengthened disquisition on the origin of this mode of building; we shall therefore proceed to the detail of those distinctions, which, being once laid down with precision, will enable persons of common observation to distinguish the difference of age and style in these buildings, as easily as the distinction of the Grecian and Roman orders. It may, however, be proper to offer a few remarks on the use of the term English, as applied to that mode of building usually called Gothic, and by some the pointed architecture. Although perhaps it might not be so difficult as it has been supposed to be, to show that the English architects were, in many instances, prior to their continental neighbors in those advances of the styles about which so much has been written, and so little concluded; it is not on that ground the term is now used, but because, as far as the author has been able to collect from plates, and many friends who have visited the continent, in the edifices there . . . the architecture is of a very different character from that pure simplicity and boldness of composition which marks the English buildings. In every instance which has come under the

author's notice, a mixture, more or less exact or remote, according to circumstances, of Italian (*sic*) composition . . . is present; and he has little doubt that a *very* attentive observation of continental buildings called Gothic, would enable an architect to lay down the regulations of the French, German, and Italian styles, which were in use at the time when the English flourished in England."

In these remarks we note (1) That, ignoring structure as the first formative principal of a style, the author looks to unessential details for distinctive characteristics; (2) that he virtually affirms English priority in the making of Gothic art; (3) that he grounds his conclusions on second-hand sources of information—such as plates, and what friends have told him; and (4) his looseness of description, as "pure simplicity and boldness," which words convey no indication of specific architectural character.

Rickman's affirmations will not bear examination in the light of facts. The leading historical facts, well known but strangely ignored in this connection, are: (1) that with the Norman Conquest, an abrupt end was put to such primitive native activities in architecture as had before been carried on in the country, and (2) that not before the close of the thirteenth century, at earliest, were conditions in England such as could conduce to the rise of a native art. Mr. Freeman, in his *Norman Conquest*, has truly said: "for two hundred years after the Conquest, the history of England is not English history at all, but French history on English soil."* It is therefore futile to affirm native origin for any post-conquest architecture in England earlier in date than the fourteenth century. The so-called early English style is not English, but Norman-French.

The Normans on settling in England, promptly took over all important building operations and introduced their own foreign style. This Norman style naturally followed in England essentially the same changes that marked its course in

Normandy, notwithstanding local differences of planning and proportions due to prevailing monastic influences.

The structural facts are equally clear, but in order to grasp them, we must give attention to the monuments of a kind that has rarely yet been manifested in writings on the subject. A broad survey of the mediaeval architecture of Western Europe in its totality, presents what at first appears a bewildering variety of forms, that seem hard to classify with precision. But if we grasp the fact that structure is the primary formative principle of any distinctive style, we shall find that they fall into two categories, one of which is structurally consistent in character, under whatever variations of form, and the other not so: these may be called respectively, the genuine and the spurious; and it will be found, further, that the spurious art in all countries and all epochs, bulks larger than that which is genuine. This matter cannot be discussed here, but it may be said that neglect of it is the principal cause of the confusion of ideas in past writings on the architecture of the middle ages.

Impartial examination with an eye to consistent structure will show that the Normans were not creative builders. The architecture which they brought into England is irrational in structure, and clearly manifests a would-be emulation of models whose principles they did not understand. These models are found in that organic vaulted architecture which, in the eleventh century, had taken form in North Italy, in the hands of the Lombard builders. This was the first architecture to manifest that creative faculty of the northern genius which, in its peculiar development of logical ribbed vaulting, ultimately produced the Gothic style of the Ile-de-France. The principles of the Lombard art were never understood by the Normans, who copied some of its structural features without perceiving their proper adjustments. The Norman works, whether in Normandy or in England, were never vaulted, save in aisles and apses, until a late period, and then rarely; and such vaulting as they did produce retains the ancient Roman

*I quote from memory, but the remark may be readily verified.

conformation, and is, as originally built, without ribs—as we see in the aisles of the transept of Winchester. Yet vaulting shafts are freely introduced, but in such a way that they could not function in vaulting over naves. Neither English nor continental writers have taken account of these facts.

Rickman was followed by Whewell and Willis, both of whom, like Rickman, make the distinctive characteristics of a style to consist in minor details. Nevertheless they both show some recognition of structure in parts of buildings. Whewell, for example, in his preface to the first edition of his *Notes on German Churches*, makes the important observation, that the use of the pointed arch had its origin in "The necessity of having arches of equal heights with different widths" in vaulting; and rightly concludes that from the vaulting "this form of arch was gradually diffused into every other part of the building." But he does not perceive that this can be said only of the Gothic of the Ile-de-France. Whewell makes other significant remarks about structure in the larger sense of the whole system of building. In a footnote on page 20, he says: "it is suggested by a friend, that the distinctive principle of construction . . . appears to be the admission of oblique pressures, and inclined lines of support . . . The eye recognizes this statical condition in the leading lines of the edifice, and requires the details to conform to it." But his comments on the French monuments show little recognition of the natural results of this principle on developed Gothic building. For instance, speaking of Amiens and Beauvais, he says: "I may make an observation or two on the consequences of the enormous height which the French architects were fond of giving to their cathedrals. The effect, under various circumstances, is no doubt very striking; as, for instance, where we view them from a favourable position in the interior, and find the eye carried by their leading members from the floor along the graceful lines of tracery (*sic*) to the figured and coloured lights of the clerestory, and *further still* (*italics mine*)

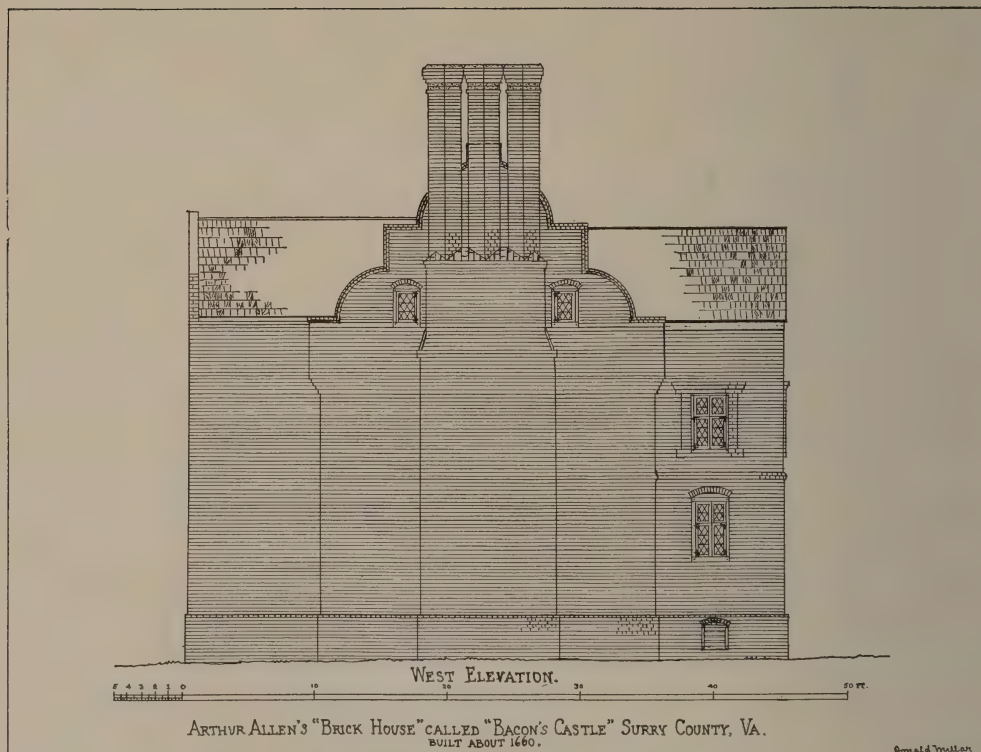
to the remote region of the vaulting lines—a region so distant, yet architecturally connected with the spot on which we stand; this configuration repeated by each of the compartments, under a varied perspectival aspect, produces an impression so different from that of smaller buildings, that it may be called magical." This description shows surprising ignorance as to the position of the vaulting in a Gothic building. It is of course impossible that the vaulting should be more remote than the clerestory, since it is of necessity *in* the clerestory and an integral part of it. But the remark that the higher parts of the fabric are architecturally connected with the spot on which we stand, is profoundly true because of the strictly logical character of the whole system, in which every part is organically connected with every other; but this can be said only of the Gothic of the Ile-de-France.

Again the writer says: "Externally also, when seen at a distance, rising over the tallest houses and trees of the city . . . the appearance of such a church is truly amazing. But when we come to look steadily . . . at this mass, we see that its height has extinguished all possibility of well proportioned dimensions and parts. Amiens, which is as long as some of our largest cathedrals, looks short, and Beauvais, having no nave, is absolutely shapeless. Moreover, the enormous height of the roof, which has no architectural character, is very fatal to grace, and the vertical and flying buttresses which rise around the building are so many and so large that they utterly obliterate its outline. At Beauvais, the buttresses . . . have at a distance, . . . the effect of, what they really are, an exterior scaffolding of stone." This takes no account of the fact that the buildings spoken of were never completed according to one original scheme. In the fragmentary state in which they stand, they cannot be judged as to proportions; for in any art, the proportions of every part are dependent on all other parts in the total composition. Then, too, it is incorrect to say that the buttress systems, which are erroneously likened to

scaffolding, obliterate the outline of the building. The abutments are not scaffolding, but integral parts of the structure, and contribute, as much as anything else, to the proper outlines of the building. Such criticism would be too shortsighted and amateurish to be worthy of notice, were it not so characteristic of past writ-

ings on the subject. The acuteness of Whewell's remark as to the origin of the use of the pointed arch as a means of meeting the structural exigencies of vaulting on the new principle, would naturally lead us to expect more discernment with regard to the Gothic system, taking it as a whole.

(To be continued)



See "Notes and Comments," page 285 of this issue

The LIBRARY OF THE ARCHITECT



By
A Lawrence Kocher

PART VII

SELECTED LIST OF STANDARD WORKS RELATING TO ARCHITECTURE AND INTENDED FOR OFFICES OF ARCHITECTS

This list of books on architecture was prepared with the advice of prominent architects of the United States and England and is intended to include such fundamental works as the practicing architect and the draftsman will find helpful. It is not a complete bibliography of the subject, but rather an approved list of the most useful standard publications.

ENGLAND, SCOTLAND, IRELAND

ADAM, R. AND J. Works in architecture. Containing plans (etc.) of the principal buildings erected in Great Britain in the reign of George III. London, 1773-1822. 3 v.

ADDY, S. O. The evolution of the English house. London, 1898.

ALLEN, GORDON. The cheap cottage and small house. London, 1919. \$3.75.

AMBLER, LOUIS. The old halls and manor houses of Yorkshire. London, 1913. \$18.00.

Illustrating houses built before the year 1700. Photogravures and measured drawings.

ARCHITECTURAL ASSOCIATION SKETCH BOOK. London, 1867-1917. 42 vols. to date.

BELCHER, JOHN, and MERVYN MACARTNEY. Later Renaissance architecture in England. London, 1901. 2 v.

Examples of the domestic buildings erected subsequent to the Elizabethan period.

BLOMFIELD, SIR REGINALD THEODORE. A history of Renaissance architecture in England, 1500-1800. London, 1897.

BOLTON, ARTHUR T. The architecture of Robert and James Adam. 1758-1794. London, 1922. 2 v. \$60.

The most complete and authoritative work on the Adam brothers.

BOND, FRANCIS. An introduction to English church architecture from the 11th to the 17th century. Oxford, 1913. 2 v.

————— English cathedrals. London, 1899.

————— Gothic architecture in England. London, 1905.

————— Wood carving in English churches. London, 1910. 2 v.

BOWMAN, H., AND J. S. CROWTHER. The churches of the middle ages. London, 1857. 2 v.

BRANDON, R., AND J. A. BRANDON. Analysis of Gothic architecture. London, 1847.

————— Paris churches. London, 1858. 2 v.

————— The open timber roofs of the middle ages. London, 1849.

BRIGGS, R. A. Essentials of a country house. London, 1911.

BRITTON, J. Cathedral antiquities of England. London, 1814-35. 6 v.

————— The architectural antiquities of Great Britain. London, 1835. 5 v.

CAMPBELL, C. Vitruvius Britannicus, or the British architect. London, 1715-25. 3 v.

COLLING, JAMES K. Details of Gothic architecture. London. N.D. 2 v.

COX, J. C. English church fittings, furniture and accessories. London, 1923.

————— The English parish church. London, 1914. \$3.50.

An account of the chief building types and their materials during nine centuries.

CRAM, RALPH ADAMS. Ruined abbeys of Great Britain. N. Y., 1905.

CROSSLEY, FRED. H. English church monuments, A.D. 1150-1550. London, 1921.

A study of tombs and effigies of the medieval period.

DAWBER, E. GUY AND W. GALS-WORTHY DAVIE. Old cottages and farm houses in Kent and Sussex. London, 1900. \$30.00.

DAWBER, E. G. Old cottages, farm houses and other stone buildings in the Cotswold district. London, 1905.

DENING, C. F. The eighteenth century architecture of Bristol. Bristol, 1923. \$17.50.

Photographs and measured drawings; chiefly Georgian monuments.

DOLLMAN, F. T., AND J. R. JOBBINS. An analysis of ancient domestic architecture exhibiting the best existing examples in Great Britain. London, 1861. 2 v.

ENGLISH COUNTRY HOUSES. Boston, 1901.

FIELD, HORACE, AND M. BUNNEY. English domestic architecture of the 17th and 18th centuries. London, 1905.

GARNER, THOMAS, AND ARTHUR STRATTON. The domestic architecture of England during the Tudor period. London, 1911. 2 v.

A series of photographs and measured drawings of country mansions, manor houses and smaller buildings, with historical and descriptive text. \$25.00.

A selection of photographs and measured drawings from GARNER AND STRATTON's work. Boston. 1923. \$10.00.

GIBBS, JAMES. A book of architecture, containing designs of buildings and ornaments. London, 1728.

A work widely followed by seventeenth century builders in America.

GOTCH, JOHN ALFRED. Architecture of the Renaissance in England. London, 1894. 2 v.

Early Renaissance architecture in England. London, 1901.

The growth of the English House. London, 1909.

HALL, SAMUEL CARTER. The baronial halls and ancient picturesque edifices of England. London, 1881. 2 v.

HARVEY, WILLIAM ALEXANDER. The model village and its cottages; Bournville. London, 1906.

HOLME, CHARLES. Old English Mansions. London, 1915.

A condensed compilation of the works of C. J. Richardson, J. D. Harding, Joseph Nash, H. Shaw and others.

HOPKINS, ALFRED. The English Village Church. N. Y., 1921.

HOWARD, F. E. AND FRED H. CROSSLEY. English church woodwork, 1250 to 1550. London, 1917.

INNOCENT, CHARLES FREDERICK. The development of English building construction. Cambridge, 1916.

JOURDAIN, M. English decoration and furniture of the later 18th century. (1760-1820) London, 1922. \$16.00.

English interiors in smaller houses. N. Y. and London, 1923. \$10.00.

LATHAM, CHARLES. In English homes; the internal character, furniture and adornment of some of the most notable houses of England. . . . London, 1904-09, 3 v.

LOFTIE, WILLIAM JONES. Inigo Jones and Christopher Wren; or the rise and decline of modern architecture in England. London, 1893.

LONDON COUNTY COUNCIL; a comprehensive compendium of monuments in the London district. London, 1900-24. vols. 1-9. \$95.00.

MACARTNEY, MERVYN E. Recent English domestic architecture. Westminster, N.D. vols. 1-6.

The practical exemplar of architecture. London, N.D. Series of six portfolios.

Measured drawings and photographs of English architecture, largely of the seventeenth and eighteenth centuries.

MARRIOTT, CHARLES. Modern English architecture. London, 1924.

MOORE, CHARLES H. The medieval church architecture of England. N. Y., 1912.

NASH, J. The mansions of England in the olden time. London, 1839-49. 4 v.

PALEY, F. A. A manual of Gothic moldings. London, 1865.

PALLADIO, ANDREA. The four books of Andrea Palladio. With notes and

added illustrations by Isaac Ware. London, 1738.

PHILLIPS, RANDALL. Small family houses. London, 1924.

PRIOR, EDWARD S. A history of Gothic art in England. London, 1899.

———. The cathedral builders in England. London, 1905.

PUGIN, A. N. W. Details of ancient timber houses of the 15th and 16th centuries. London, 1836.

———. Examples of Gothic architecture; selected from various ancient edifices in England. By A. C. Pugin and A. W. Pugin. London, 1850. 3 v.

PUGIN, A. C. A series of ornamental timber gables from existing examples in England and France of the 16th century. London, 1854.

RAMSEY, STANLEY C., AND J. D. M. HARVEY. Late Georgian houses, details and interiors. London, 1923. \$7.50.

RAMSEY, STANLEY C. Small houses of the late Georgian period in England. 1919. \$7.50.

RICHARDSON, C. J. Elizabethan architecture. London, 1840.

RICHARDSON, ALBERT EDWARD AND C. L. GILL. London houses from 1660 to 1820; a consideration of their architecture and detail. London, 1911.

———. Regional architecture of the west of England. London, 1924.

RICHARDSON, ALBERT EDWARD. Monumental architecture in Great Britain and Ireland during the eighteenth and nineteenth centuries. London, 1914. \$33.50.

ROSENBERG, LOUIS CONRAD. Cottages, farmhouses and other minor buildings in England of the 16th, 17th and the 18th centuries. N. Y., 1923.

SHAW, HENRY. Details of Elizabethan architecture. London, 1839.

SHUFFREY, L. A. The English fireplace; a history of the development of the chimney-piece . . . London, 1912.

STRATTON, A. Elements of design and composition in classic architecture. London, 1924. \$7.50.

SWARBRICK, JOHN. Robert Adam and his brother; their lives, work and influence on English architecture, decoration and furniture. London, 1915.

TANNER, HENRY. English interior

woodwork of the 16th, 17th and 18th centuries. London, 1902.

———. Old English doorways; historical examples from Tudor times to the end of the 18th century. London, 1903.

TAYLOR, A. T. Towers and steeples designed by Sir Christopher Wren. London, 1881.

TIPPING, HENRY AVRAY. English homes of the early Renaissance; Elizabethan and Jacobean houses and gardens. London and N. Y., 1912.

The third volume of "In English Homes" series.

———. Grinling Gibbons and the woodwork of his age (1648-1720). London, 1914.

———. In English Homes; the internal character, furniture and adornment of some of the most notable houses in England. London and N. Y. 6 vol., each \$25.00.

TRIGGS, HARRY INIGO, AND H. TANNER, JR. Some architectural works of Inigo Jones; a series of measured drawings and other illustrations . . . London, 1901.

VALLANCE, AYMER. The old colleges of Oxford; their architectural history. London, 1912. \$40.00.

———. Old crosses and lychgates. London, 1920. \$7.50.

WARE, ISAAC. A complete body of architecture, adorned with plans and elevations from original designs . . . London, 1756.

One of the many "handbooks" used by the early American as well as by English builders.

WEAVER, SIR LAWRENCE. Houses and gardens by E. L. Lutyens. London, 1913. \$22.50.

———. Country life book of cottages. London, 1913.

———. Small country houses of today. London, 1914, 1919. 2 v. \$10.00 each.

WILLIAMS-ELLIS, C. Cottage building in cob, pisé, chalk and clay. London, 1919. \$2.75.

WILMOTT, ERNEST. English house design; . . . a selection and brief analysis of some of the best achievements in England. London, 1911.

GERMANY, NETHERLANDS,
SCANDINAVIA

BERGNER, H. Handbuch der bürgerlichen Kunstaltertümer in Deutschland. Leipzig, 1906. 2 v.

BEZOLD, G. Die Baukunst der Renaissance in Deutschland, Holland, Belgien und Dänemark. Leipzig, 1908.

BRINCKMANN, A. E. Deutsche Stadtbaukunst in der Vergangenheit. Frankfurt, 1911.

DEHIO, G. AND G. BEZOLD. Die kirchliche Baukunst des Abendlandes. Stuttgart, 1884-1901. 7 v.

GRISEBACH, AUGUST. Das Deutsche Rathaus der Renaissance. Berlin, 1907.

JONES, S. R. Old houses in Holland. Edited by C. Holme. London, 1913.

MODERN SWEDISH ARCHITECTURE; edited by a committee of Swedish architects. London, 1924. \$25.00.

PINDER, G. M. W. Deutsche Dome des Mittelalters. Düsseldorf, 1912.

POPP, H. Die Architektur der Barock und Rokokozeit in Deutschland und der Schweiz. Stuttgart, 1913.

SCHAEFFLER, C. Moderne Baukunst Leipzig, 1908. The examples are of architecture in Berlin.

Société centrale d'architecture de Belgique. Berlin, 1886.

Drawings of dwellings and town halls.

VERSCHELDE, C. The ancient domestic edifices of Bruges. Bruges, 1875.

YERBURY, F. R. Old domestic architecture of Holland. London, 1924.

THE CRAFTS, FURNITURE,
SCULPTURE, PAINTING

BANKART, GEORGE P. The art of the plasterer; an account of the decorative development of the craft . . . London, 1908.

CESCINSKY, HERBERT, AND E. R. GRIBBLE. Early English furniture and woodwork. London, 1922. 2 v.

CESCINSKY, HERBERT. The old-world house. London, 1924. 2 v.

Devoted chiefly to furniture and furnishings.

EBERLEIN, HAROLD D. AND ABBOT McCURE. The practical book of period furniture. Philadelphia, 1914. \$10.00.

FAURE, ELIE. History of art. Translated by W. Pach. N. Y. and London, 1921-24. 4 v.

FERRARI, GIULIO. Il ferro nell' arte Italiana. Milano, 1923.

————— Lo stucco nell' arte Italiana. Milano, 1910.

FOWLER, HAROLD N. A history of sculpture. N. Y., 1916.

GARDNER, J. T. English ironwork of the 17th and 18th century. London. \$20.00.

HUNTER, G. LELAND. Italian furniture and interiors. N. Y., 1917, 18. 2 v.

LOCKWOOD, L. V. Colonial furniture in America. N. Y., 1913.

LYON, I. W. The colonial furniture of New England. Boston, 1891. New Ed. 1924.

MACQUOID, PERCY AND RALPH EDWARDS. The dictionary of English furniture. London, 1925. 3 v. \$35.00 per v.

MAGONIGLE, H. VANBUREN. The nature, practice and history of art. N. Y., 1925.

MAILLARD, ELIZA. Old French furniture and its surroundings. London, \$7.50.

MILLAR, W. Plastering, plain and decorative, with an account of historical plastering in England, Scotland and Ireland. London, 1897.

MURPHY, BAILEY SCOTT. English and Scottish wrought ironwork. London, 1904.

PACH, WALTER. The masters of modern art. N. Y., 1924. \$3.50.

POST, CHANDLER RATHFON. A history of European and American sculpture from the early Christian period to the present day. Cambridge, 1921. 2 v.

PRIOR, E. S., AND A. GARDNER. An account of mediæval figure sculpture in England. Cambridge, 1912.

SAINT, LAWRENCE B., AND HUGH ARNOLD. Stained glass of the middle ages in England and France. London, 1913.

SHERRILL, CHARLES H. Stained glass in Spain and Flanders, London, 1924.

TIPPING, HENRY A. Grinling Gibbons and the woodwork of his age (1648-1720). London, 1914.

TWOPENY, WILLIAM. English metal work. London, 1904.

WEAVER, LAWRENCE. English leadwork, its art and history. London, 1909.

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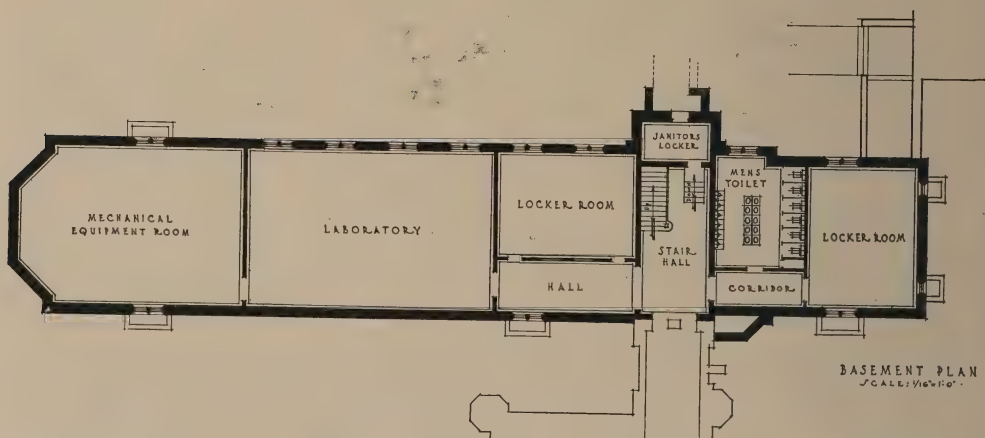
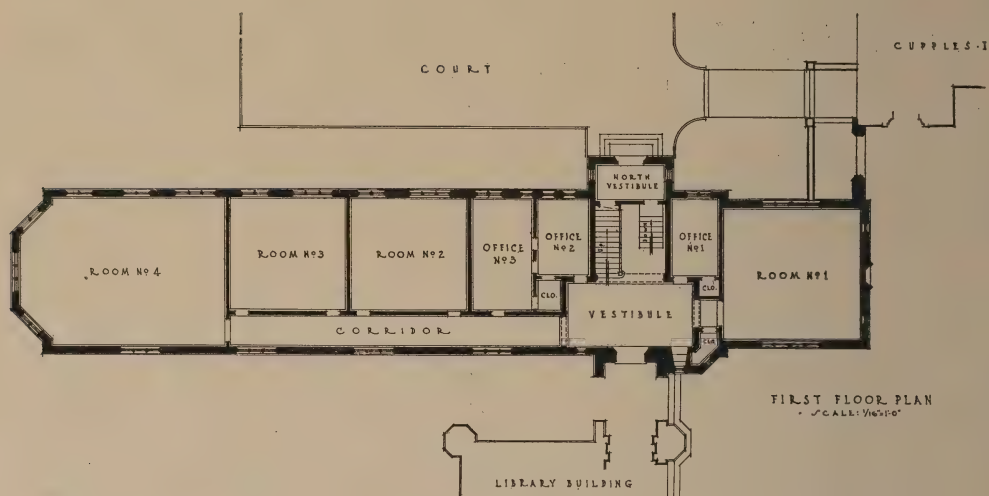
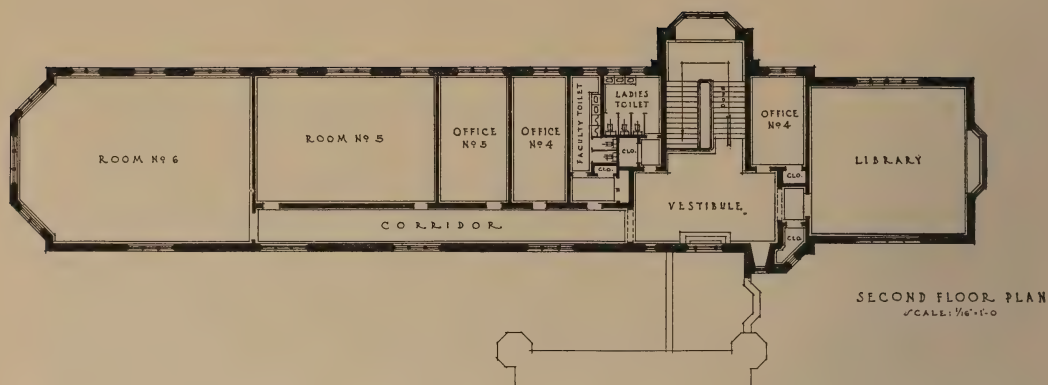
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North Entrance

DUNCKER HALL OF COMMERCE AND FINANCE, WASHINGTON UNIVERSITY
ST. LOUIS, MISSOURI

Frank Cann and Angelo Corrubia, Architects
Jamieson and Pearl, Consulting Architects



DUNCKER HALL OF COMMERCE AND FINANCE, WASHINGTON UNIVERSITY
ST. LOUIS, MISSOURI

Frank Cann and Angelo Corrubia, Architects
Jamieson and Spearl, Consulting Architects



Memorial Tablet

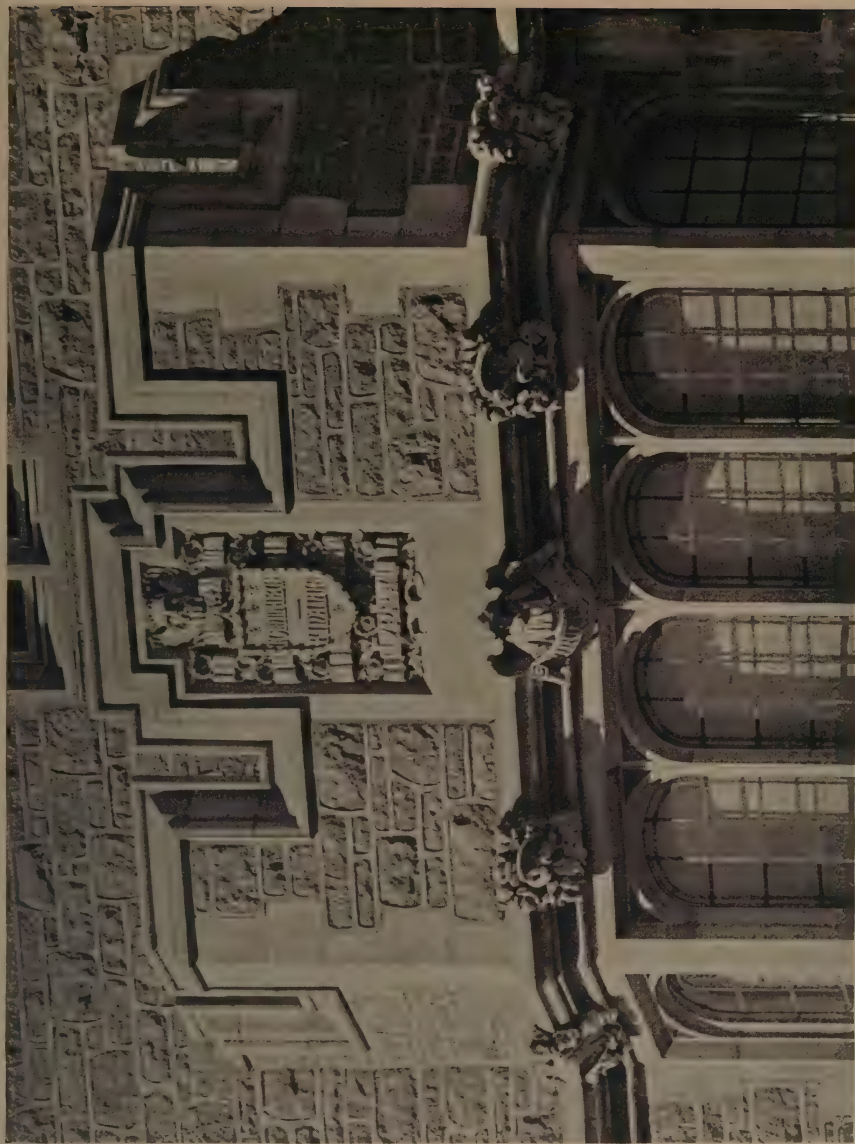
DUNCKER HALL OF COMMERCE AND FINANCE, WASHINGTON UNIVERSITY
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Frank Cann and Angelo Corrubia, Architects
Jamieson and Spearl, Consulting Architects



East Elevation [Facing Main Quadrangle]
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Frank Carr and Angelo Corrubia, Architects
Jamieson and Spearl, Consulting Architects



Upper Part of East Oriel
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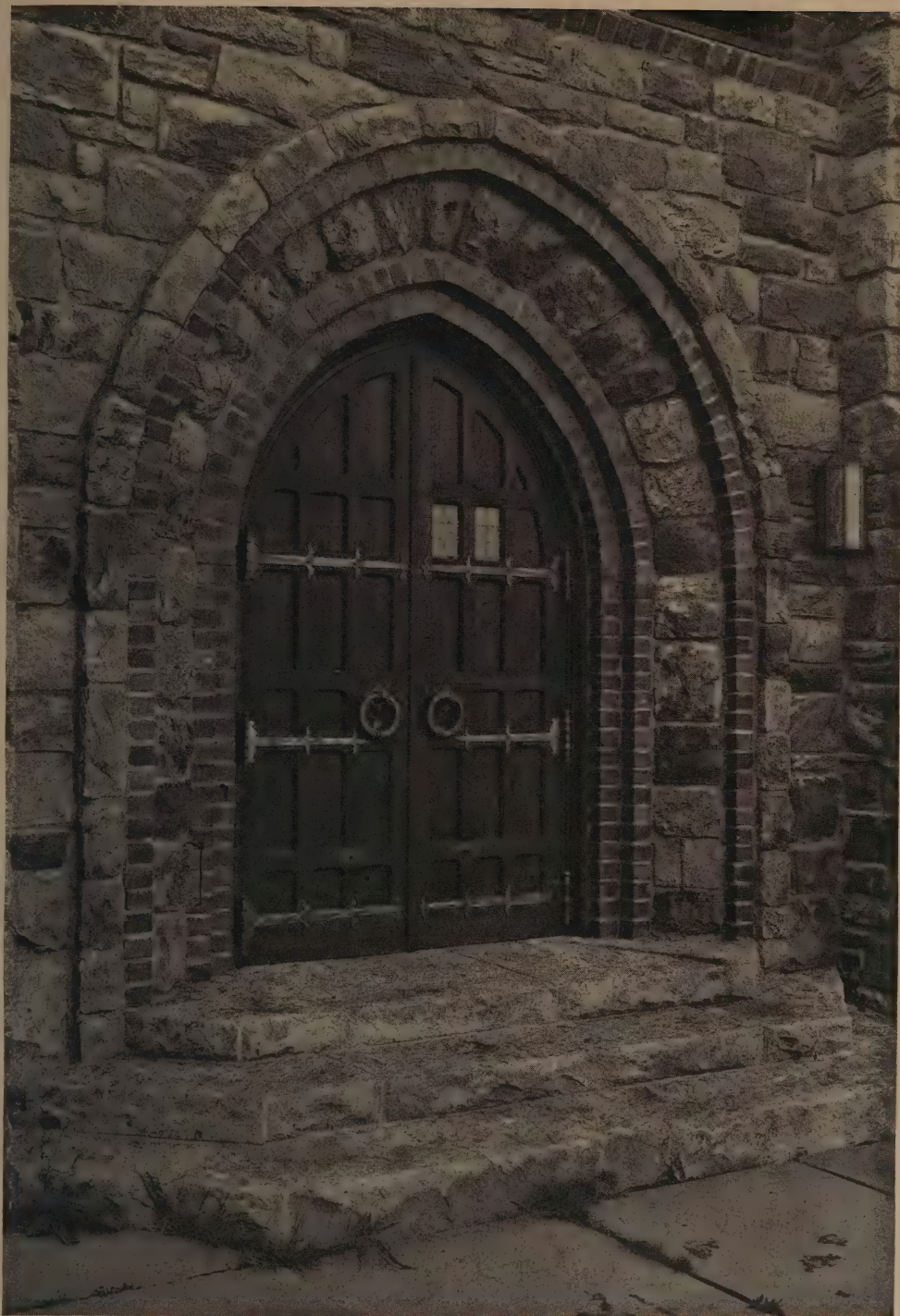
Frank Cann and Angelo Corrubia, Architects
Jamieson and Spear, Consulting Architects



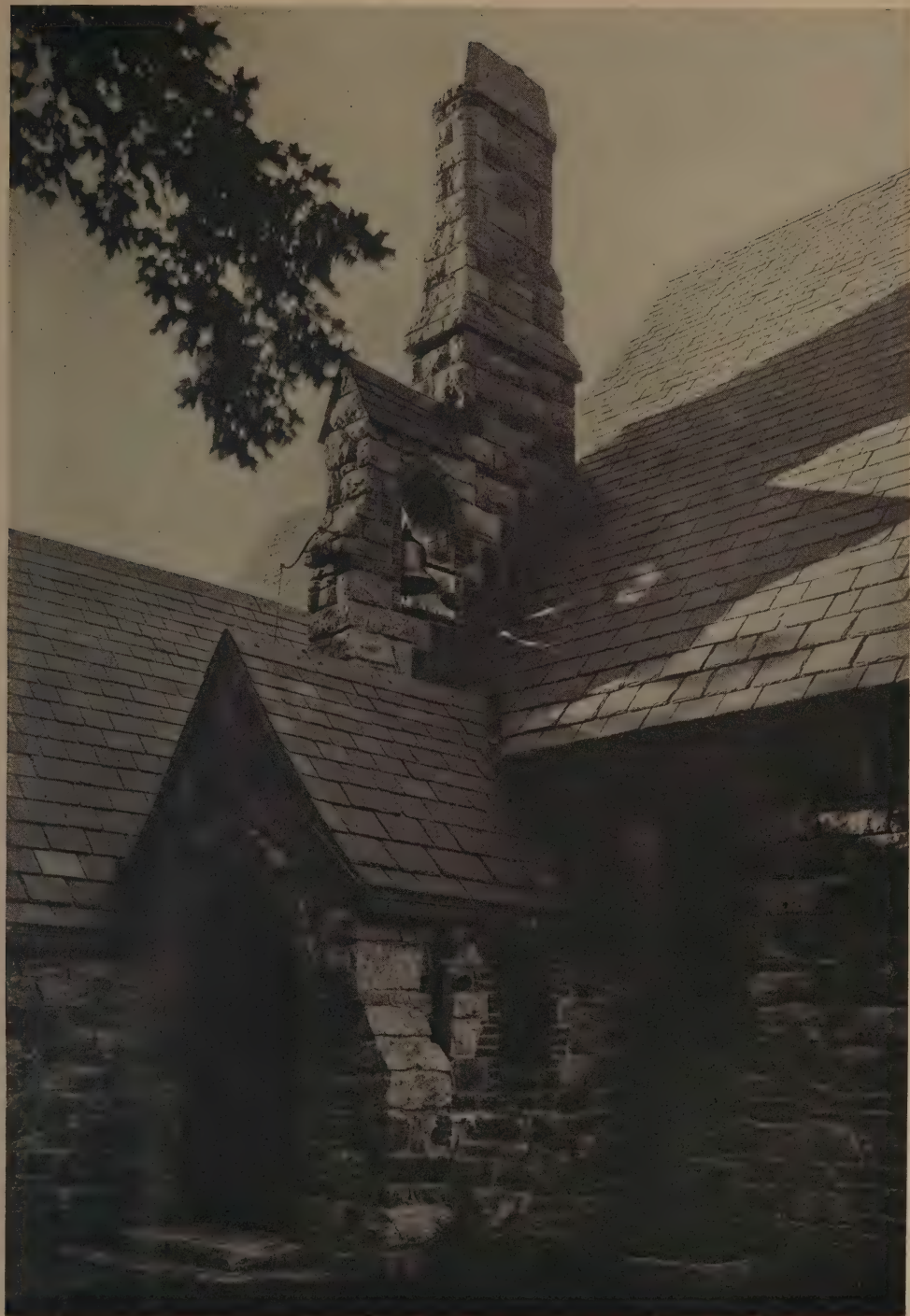
View from Summer House
WORTHINGTON HOUSE, PITTSBURGH, PA.
Louis Stevens, Architect



End of Library Through Murdoch Street Entrance Gate
WORTHINGTON HOUSE, PITTSBURGH, PA.
Louis Stevens, Architect



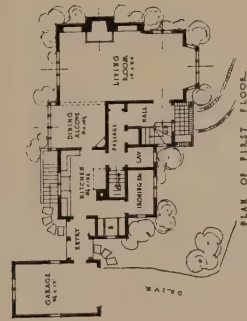
Entrance Detail
CHURCH OF ST. JOHN AND ST. MARY, CHAPPAQUA, NEW YORK
Raphael Hume, Architect



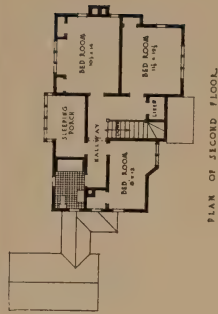
Belfry and Side Entrance
CHURCH OF ST. JOHN AND ST. MARY, CHAPPAQUA, NEW YORK
Raphael Hume, Architect



Interior
CHURCH OF ST. JOHN AND ST. MARY, CHAPPAQUA, NEW YORK
Raphael Hume, Architect

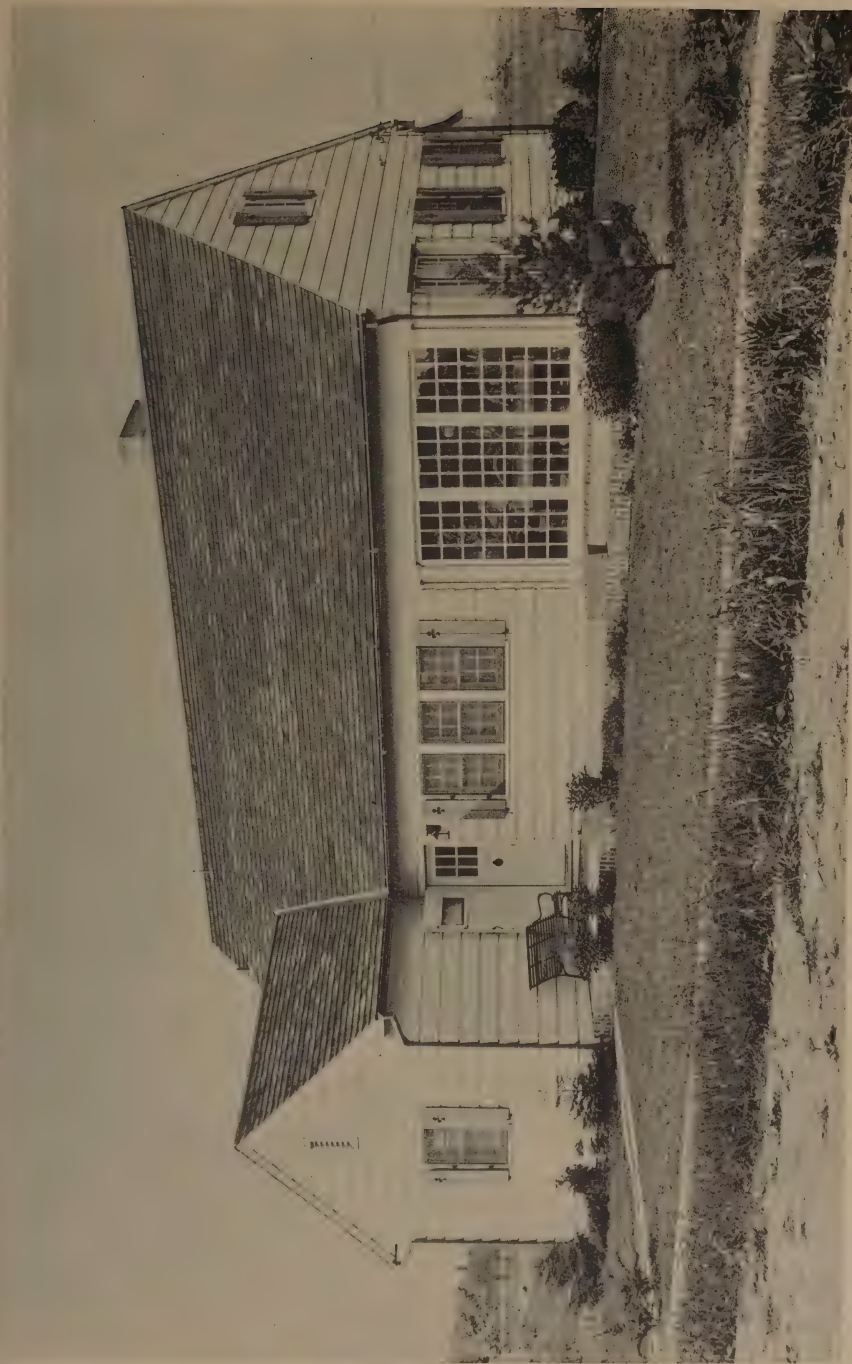


RESIDENCE OF ELMER E. YOUNG
EASTMORELAND, PORTLAND, OREGON
Harold W. Doty, Architect

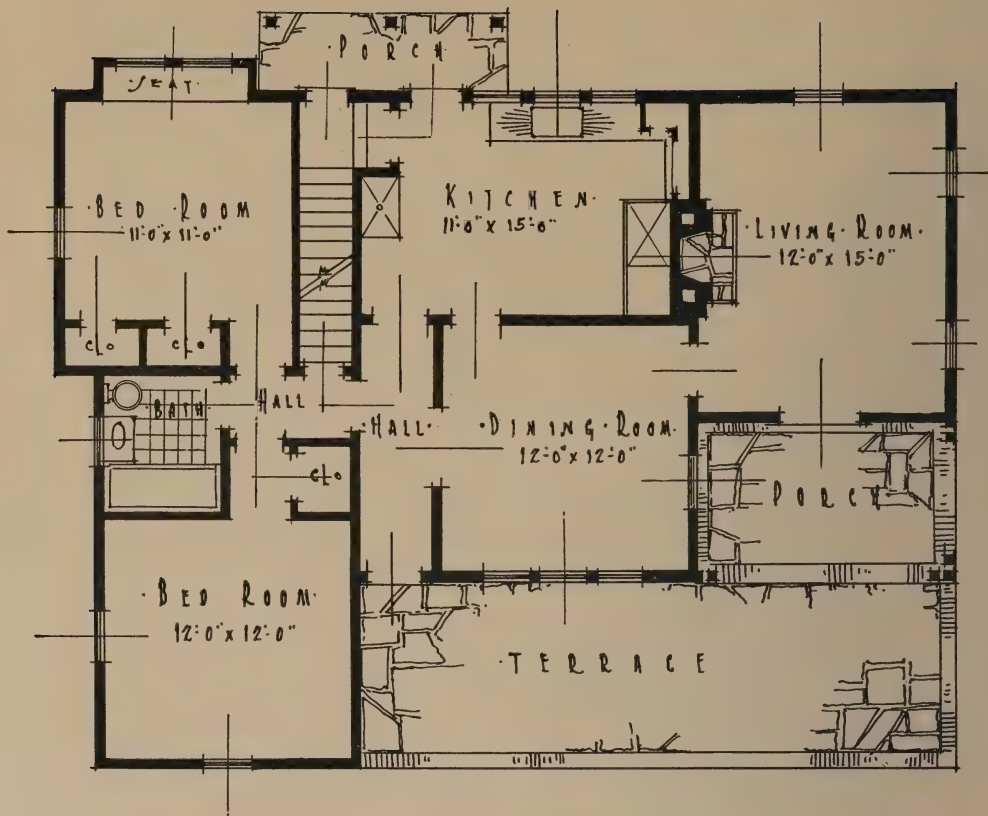




RESIDENCE OF COL. F. J. COMBE, SAN ANTONIO, TEXAS
The Russell Brown Company, Architects



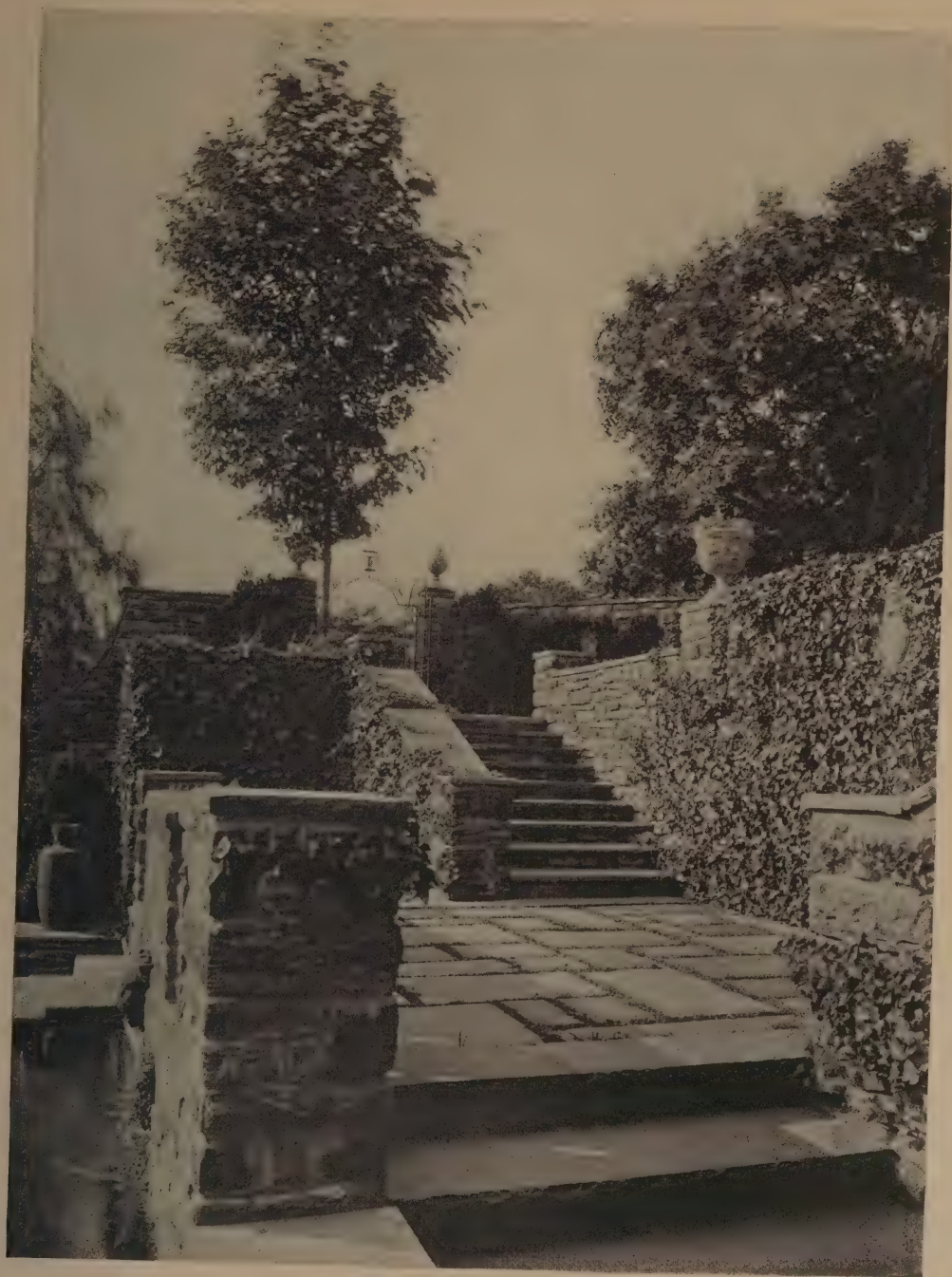
RESIDENCE OF FRANK CHLUMSKY, ESQ., HICKSVILLE, L. I.
Otto Preis, Architect



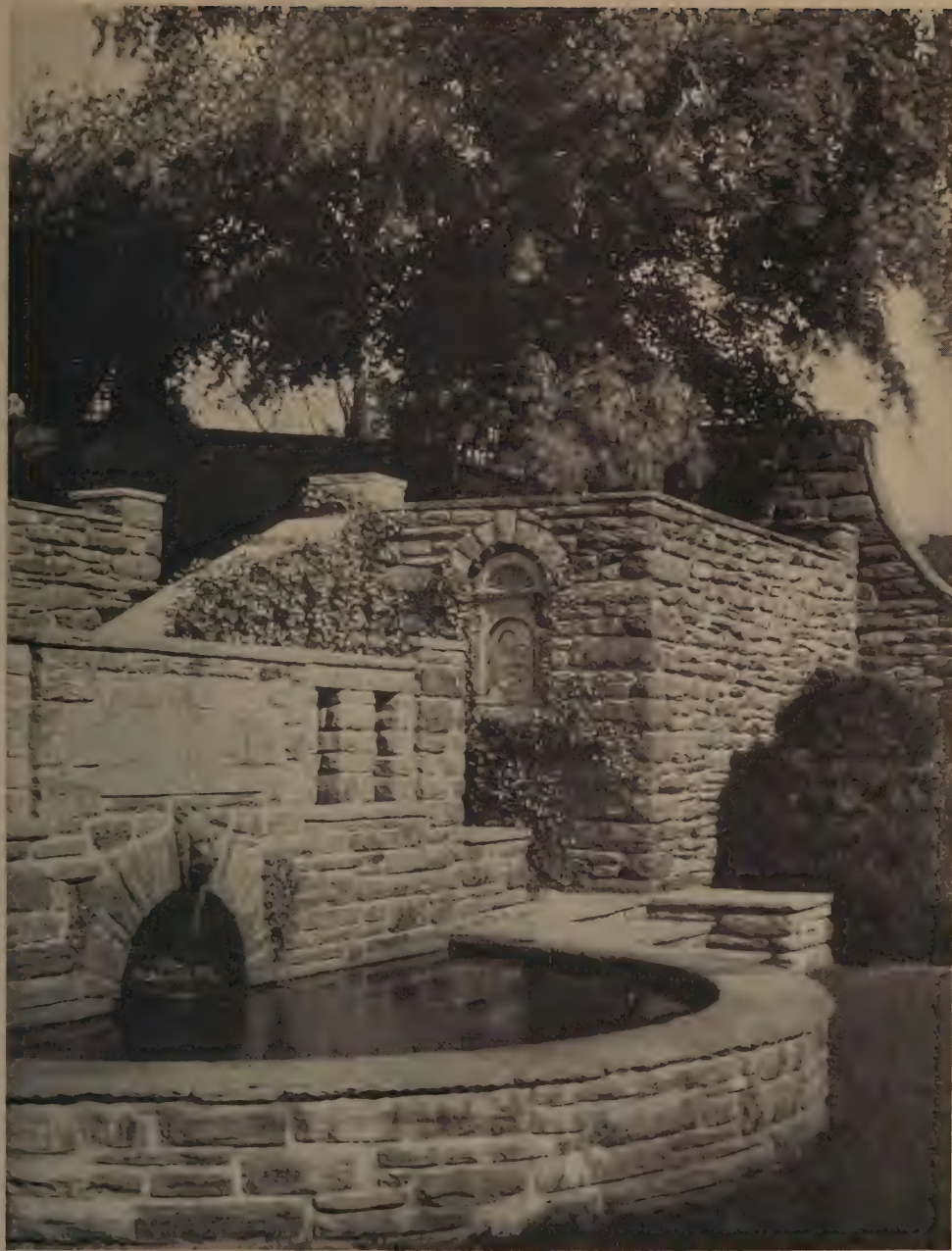
Floor Plan
 RESIDENCE OF FRANK CHLUMSKY, ESQ., HICKSVILLE, L. I.
 Otto Preis, Architect



Green Garden and Pool
ESTATE OF S. F. HOUSTON, ESQ., ST. MARTIN'S, PA.
Robert R. McGoodwin, Architect



Steps from Upper Garden
ESTATE OF S. F. HOUSTON, ESQ., ST. MARTIN'S, PA.
Robert R. McGoodwin, Architect



Garden Steps and Semi-Circular Pool
ESTATE OF S. F. HOUSTON, ESQ., ST. MARTIN'S, PA.
Robert R. McGoodwin, Architect



Forecourt and West Front
HONILEY HALL, KENILWORTH, WARWICKSHIRE
C. E. Bateman, Architect

The ATLANTA SCHOOL BUILDING PROGRAM

By A Ten Eyck Brown

Supervising Architect of the Board of Education

REALIZING the deplorable condition of the school buildings in Atlanta, the Board of Education, together with the Superintendent of Schools and other department heads, agitated the question of means for the remodeling of certain old school buildings and the construction of new ones. This agitation resulted in the authorization of a bond issue for eight million dollars, four million of which was for building and enlarging existing schools.

The first action taken, after thorough investigation throughout the country, was the employment of school experts or educational engineers headed by Dr. George W. Strayer and Dr. N. L. Engelhardt, of the Teachers' College, Columbia University, whose years of experience and technical knowledge made them competent to handle the matter. This organization surveyed the situation covering location and density of the various classes of school population and developed the necessity for additions to certain buildings, for new buildings in some cases, demolition of existing ones in other cases, in order to accommodate the existing school population and provide for a definite increase for a certain number of years to come. The investigation also covered the remodeling of the system itself, not only the physical requirements, but the educational, as it was decided to change the system from grammar schools and senior high schools to grammar schools with kindergartens, or elementary schools, junior high schools and senior high schools.

The survey of the experts resulted in the recommendation of the adoption of the above system, and consisted of the enlargement of three elementary schools and the building of nine new ones; four junior high schools and two senior high schools, with suggestions as to their proper location in relation to school pop-

ulation, approximate present requirements and approximate ultimate size, in order that the program could proceed to a certain stage within the limits of the bond issue.

This recommendation accomplished the enlargement of the three schools, including all the requirements for class rooms and offices, auditoriums and gymnasiums; while in the case of the nine new elementary schools, eventually to contain thirty class-rooms, about 50 per cent. of the requirements were completed. The junior and senior high schools were also planned for their ultimate needs, but only the class room units were recommended at this time, leaving the auditoriums and gymnasiums to be built out of a future bond issue. To have completed all of these projects would have involved an expenditure of ten million dollars, while the net result of the recommendation showed an expenditure of approximately five million dollars for actual construction and lots for the first units.

The Bond Commission took up with the Georgia Chapter of the American Institute of Architects the question of an organization for the designing and construction of the schools and requested their careful investigation of the situation and recommendations as to how the matter could be handled to the best advantage of the program, and with the employment of local qualified members of the profession.

In order for the commission to follow out its ideas of operation and to conserve the interests of the profession as much as possible, the following scheme of operation was adopted:

A supervising architect was appointed, whose duties were to consist first of a plan for the rating and appointment of local architects for the different projects; second, the carrying out of the recommendations of the educational engineers

in consultation with them, as they were retained by the Commission to suggest requirements for the various buildings in detail, to criticise and make suggestions in reference to preliminary drawings for each project, and finally to go over the working drawings and specifications to see that they conformed to the technical requirements from their point of view as educational engineers—in other words, they were in constant touch with the work as technical advisers, and the supervising architect acted in the main as an owner would with technical knowledge, issuing instructions to the project architects in all details in order to forward the work along the most economical, rapid and systematic lines.

In order to properly rate the local architects, questionnaires were issued covering their education, experience and organization, especially along the lines of school work, the question as to organization being for the purpose of developing their ability to carry out certain projects promptly and efficiently, either with the force at their disposal or to develop their ability to increase this force to the desired dimensions. With this questionnaire there were also submitted plans, specifications and photographs of a school building the architect had designed, or of a building of a character as nearly as possible like a school, in order that the supervising architect and the Commission could judge the qualifications of the applicant from actual construction, or from the method and character of production of plans and specifications in a general way—as far as possible.

As there were twelve elementary buildings, four junior high buildings and two senior high buildings to be constructed, it was, of course, only possible to use this number of architects, but in the case of the two larger senior high schools, the leading firms of architects were given charge of them, with another firm whose experience was more along engineering lines, as associate.

After the appointment of architects and the selection of sites, surveys were turned over to them, together with a detailed program of the requirements for

their respective buildings. Preliminary sketches were then submitted to the supervising architect, and were gone over by him in consultation with the heads of the School Department and the educational engineers. Changes and alterations were necessary in some cases, and re-modeled studies were re-submitted until a satisfactory solution of each problem was attained, when instructions were issued to proceed with the preparation of working drawings, specifications, details, and other necessary material.

The question of standardization of methods and production of the general contract drawings was given a great deal of consideration, as was the method of designing and specifying the structural and mechanical engineering features.

In order that each project architect might work along logical lines the several structural engineers standardized their methods of construction, as did the mechanical engineers on the plumbing, heating and electrical work. The methods pursued for engineering services worked out so as to enable one engineer to cover three or four projects, except the two larger ones, which naturally had individual engineers.

Subsequent to the instructions to proceed with the working drawings, in order to systematize the entire operation on the same basis, a series of bulletins was issued by the supervising architect, copies of which went to each project architect, the educational engineers and the school authorities, so that everyone concerned was informed of every action before it took effect.

By this system of bulletins, standardization in detail was kept before everyone concerned from the inception of the program. This covered not only standardization of design, plans and material, but typical details of class room construction, corridor, stairway and toilet construction, and laboratory and special rooms construction throughout. In addition to this the methods to be followed after the letting of a contract were also clearly outlined in the bulletins.

Upon the completion of the working drawings and specifications for each proj-



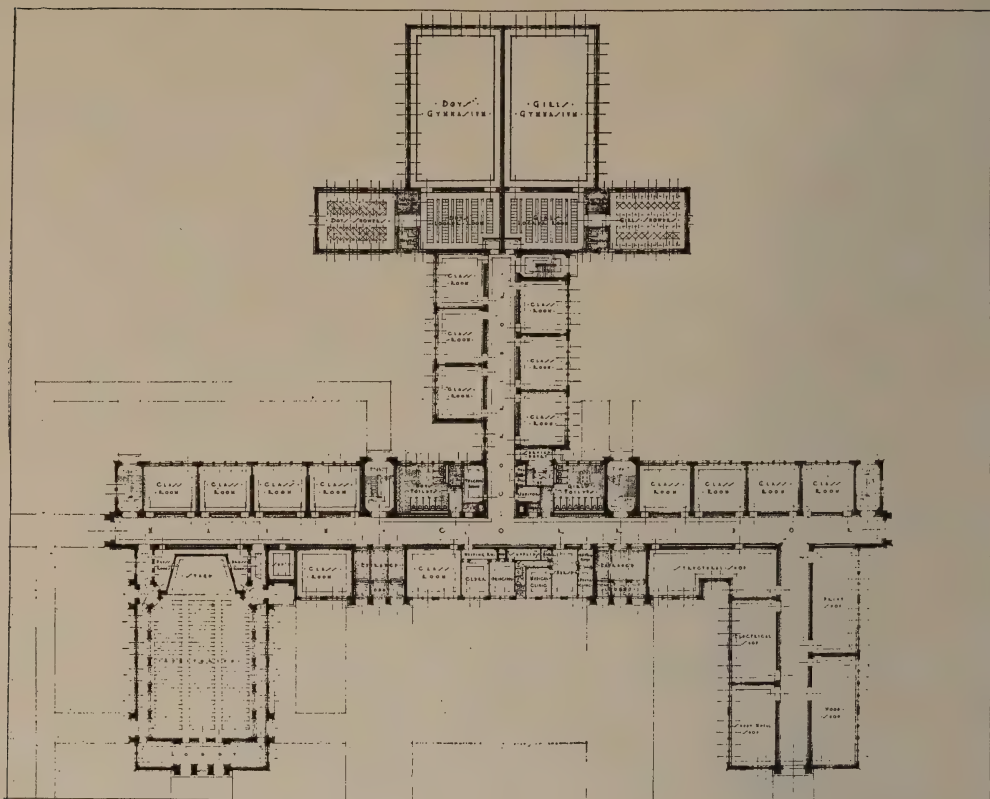
The Architectural Record

JOSEPH E. BROWN JUNIOR HIGH SCHOOL, ATLANTA, GA.

Warren C. Powell, Architect

A. Ten Eyck Brown, Supervising Architect

March, 1925



Floor Plan

JOSEPH E. BROWN JUNIOR HIGH SCHOOL, ATLANTA, GA.

A. Ten Eyck Brown, Supervising Architect.

Prirgle and Smith, Architects

ect, before they were inked in, they were turned over to the supervising architect for a final check as to design, material, standardization of detail, etc., and when approved the project architect was given instructions to complete them and make a certain number of blue prints, which were turned over to the supervising architect's office.

After receipt of this material official advertisements were issued for estimates, and in this connection it might be interesting to note that three different kinds of bids were received on the formal bid blanks issued on each project, covering first, a lump sum contract, second, a cost plus percentage, third, cost plus a fixed fee. In the case of the cost plus percentage and cost plus a fixed fee, the ulti-

mate cost was to be guaranteed not to exceed the original lump sum figure, with the final result that all of the work was let on the cost plus a fixed fee basis, with the lump sum as a guaranteed upset figure, and any savings were to be divided 75% to the owner and 25% to the contractor. This method covered, however, only the general contract, as the mechanical work was all let separately on lump sum contracts.

The necessity for this form of contract was apparent from the beginning, as it would be in most structural problems, as it was seen that the desired results could not be attained without practice of the most rigid economy.

Each contractor submitted a complete itemized schedule of unit costs totaling

the full amount of his contract, at the time it was signed. Before any sub-contracts were let or orders were issued for material new estimates were secured, based sometimes on changed conditions, or a restudy of requirements, or the substitution of other material than that specified; the net results of which was a saving of from 5 to 10 per cent. on all projects on the general contract work, which enabled the Commission to carry the program to completion without securing additional funds other than those covered by the original bond issue, although the purchase of property over-ran the amount estimated in the original schedule covering the projects themselves in detail.

After the award of a contract, the preparation of contract documents, bond, etc., was performed in the office of the supervising architect, as were most of the administrative details of the work, except supervision of construction on the ground, which was done by each project architect, or his assistants.

As each sub-contract was let and each order for material was definitely decided upon, forms of purchase orders were supplied to the contractor in triplicate, one of which went to the successful bidder, one to the supervising architect, and one was retained by the general contractor and placed in his record files.

All credit and extra orders were made on similar forms and the same method was pursued, so that a constant account was kept in the Auditor's office and by this method of orders the files of all subjects were almost always complete.

In order to systematize the production of drawings, keeping of records, progress schedules, photographs, estimates, payments, etc., a scheme was drawn up covering these items in detail and each project architect was supplied with forms covering the daily and weekly reports, the submission of photographs every two weeks and submission of estimates for checking every two weeks to the supervising architect, whose duty it was to issue the certificates for payments on all projects that were under way.

In order to carry on the administrative part of the work it was necessary for the

supervising architect to have an organization of superintendents covering general contract work, and mechanical work, a general office for the keeping of records, issuance of orders, etc., and an auditing office for the keeping of a complete set of books on each project. the checking of sub-contracts, orders for material and payments upon same when due.

As a result, the supervising architect on the completion of the entire program was able to submit a complete report in detail to the Commission, showing expenditure of every penny from start to finish, together with the net cost of each project and the amount of saving.

Not only was this useful in taking care of the matter on a businesslike basis, but when a saving was made on one project, and an additional expenditure necessary on another, it was quite possible to re-apportion these amounts in a logical manner, with a complete avoidance of the usual difficulties and delay in public work.

It is not intended to give the impression that any one person connected with this work controlled it entirely, or performed the entire service. Each architect was responsible for the production of his plans and specifications and for the construction of his project in accordance with them from start to finish, all of this work, however, going forward in close touch with the office of the supervising architect, in order that the final results might be as comprehensive and complete as it was possible to make them.

Although there is nothing particularly original about these methods, their practical results possibly justify touching on the detail pursued, especially in the standardization of the design and specifications covering general and mechanical work.

As to design, it was decided that a great deal of difficulty in the upkeep of existing buildings in this city and elsewhere was caused by inadequate and cheap construction and designs involving architectural features that required constant upkeep, painting, etc.

To overcome this situation in the new buildings, a design was adopted which might be called Lombardy Italian, the main features of which were that the ef-



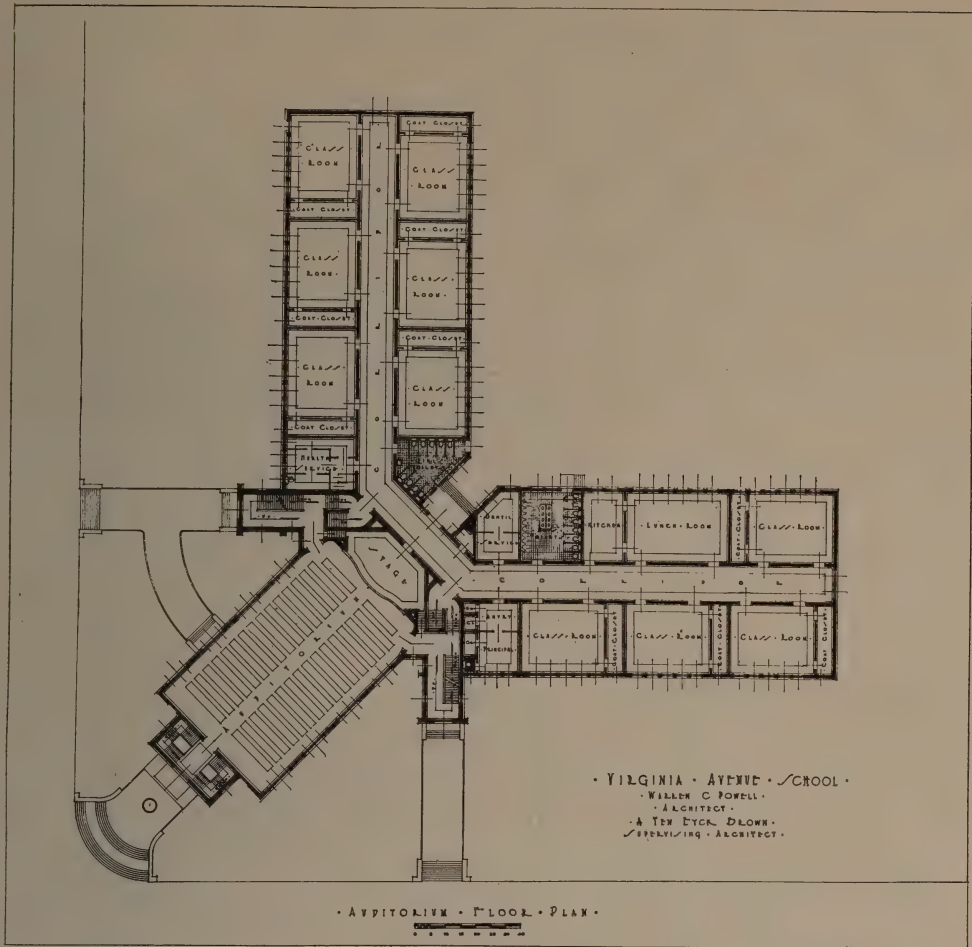
The Architectural Record

SAMUEL M. INMAN SCHOOL, ATLANTA, GA.

Warren C. Powell, Architect

A. Ten Eyck Brown, Supervising Architect

March, 1925



Auditorium Floor Plan
 SAMUEL M. INMAN SCHOOL, ATLANTA, GA.
 Warren C. Powell, Architect A. Ten Eyck Brown, Supervising Architect

fect was gotten in the mass silhouette and openings, while the necessity for belts, panels, cornices, etc., to give interest, was accomplished in the various ways of laying the brick and offsetting same, thus eliminating such features as cornices, belts, pediments, columns, pilasters, etc., of the more or less durable material.

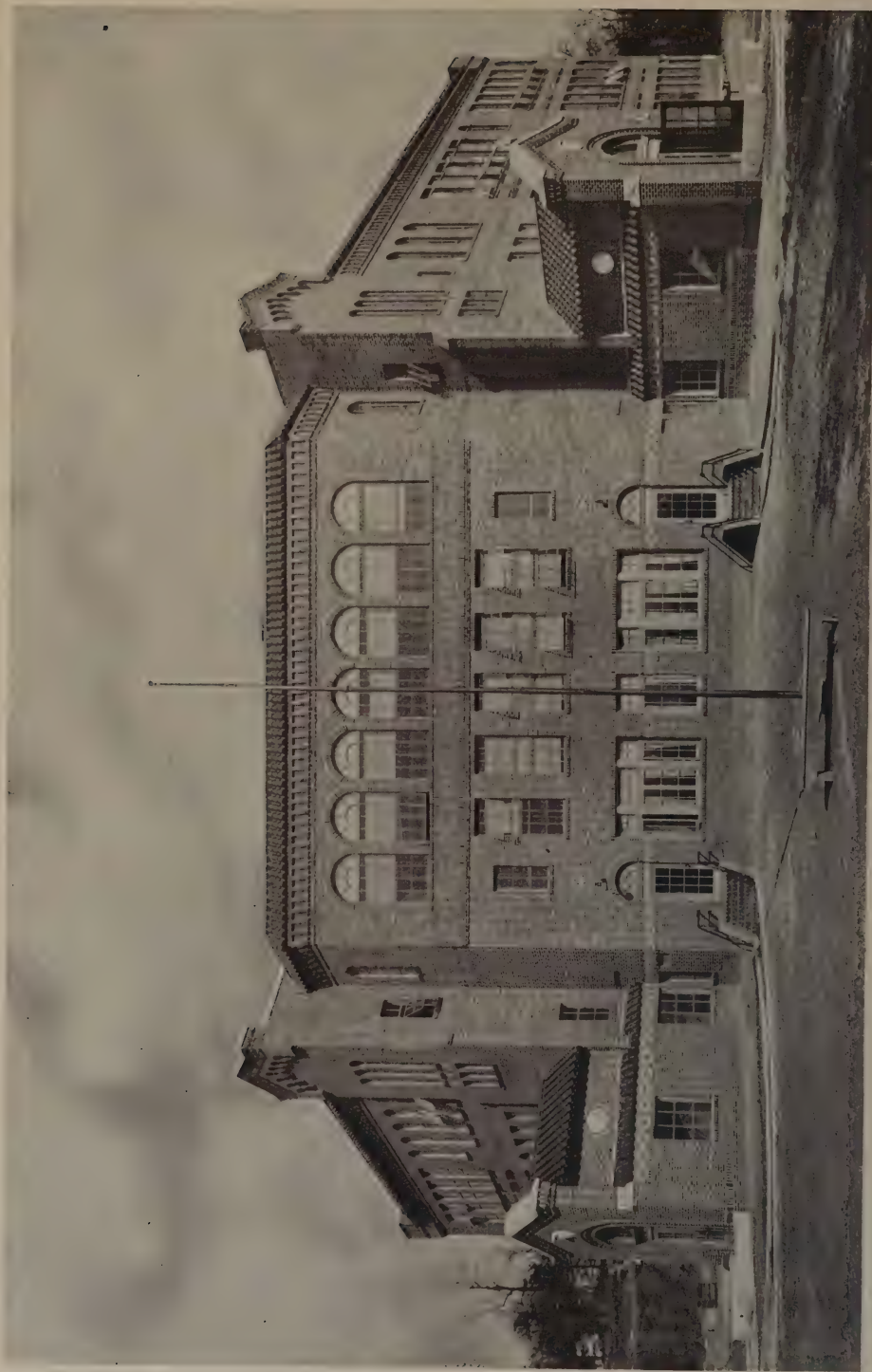
All of the buildings except some of those which were added to old buildings of ordinary construction, are as fireproof as they can be made, this number being fifteen out of the total of eighteen. The elementary schools consist of brick bearing walls, reinforced concrete floors and roofs, while the junior and senior high schools were constructed with concrete

frames and brick and tile enclosing walls.

The following features were adopted in all of the buildings in a larger or lesser degree as the size of each project dictated:

Steel sash, terrazzo corridors and stairs, elimination of wood trim in all the class rooms and windows, also all metal trim on all interior doors, terrazzo floors and marble wainscoting and stalls in all toilets. This also involved the standardization of plans in connection with corridors, staircases, entrances, etc., in order that all staircases should open on the ground and minimize panic and fire risks.

The class rooms in all the buildings were designed, as stated, without wood



The Architectural Record

SAMUEL M. INMAN SCHOOL, ATLANTA, GA.
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trim, and with the use of wooden floors with sanitary bases, natural slate blackboards, with cork bulletin boards, proper lights and ventilation, cloak rooms without doors for elementary class rooms, or in a general way with the elimination of all unnecessary detail both inside and out, the construction used being durable and sanitary in every way.

In reference to the mechanical work, standardized methods were adopted as to heating, covering the character of piping, radiators, boilers, etc., and the system of ventilation covering the types of fans, motors, etc. Also in reference to plumbing, standardization of fixtures was agreed upon in order to secure the most durable and sanitary; and in regard to electrical work, a minimum of lighting fixtures and those of most durable material in connection with outlet boxes, panel boards, motors and other details were adopted in order in a general way to secure equipment of the most lasting type, needing the least repair, and standardized so that the School Department could make replacements that would fit practically all buildings in case of necessity, and avoid the delay and expense usual in cases where buildings have different specialties throughout the mechanical installations.

Another point of interest might be that on a great many of the projects complete working drawings were produced and bids were received on sections or units of the building; the first unit, of course, being that covering the class rooms and offices for a primary operating unit, while special class rooms, auditoriums, gymnasiums and shop units were separated, which resulted in most valuable information for completion of each project in every way at some future time when sufficient funds are secured for the purpose. This information also supplied data upon which the School Department can base estimates for future expenditures in buildings or betterments, whether constructed out of current funds or bond issues.

As evidence of the result of careful planning and standardization, 90 per cent of these buildings have been in operation for over a year, and the business office of the School Department having these buildings in charge has had practically no serious difficulty in connection with anything pertaining to them, especially in reference to mechanical plants, and their upkeep has been negligible, while it is anticipated that for years to come it will amount to very little in proportion to the amount invested in each project, and the methods pursued in accomplishing this result have been more than justified—not only as to the satisfaction of the buildings for educational purposes, but for continuous and economical operation.

It is also notable that this program involved the employment of twenty architects of different qualifications, character and temperament, and approximately 50 per cent. of that number of structural and mechanical engineers, who had never worked together before, but who in fact had been enthusiastic competitors. Nevertheless throughout the three years covered by the operations there has been no difference of opinion, difficulty or dissension of any nature between the project architects and supervising architects, or between them and the Commission, that has been important enough for submission to the Board of Education, which is evidence in itself of the smoothness of operation covered by this method of administration of a large public construction program, in a part of the country where it is, to say the least, a most unique instance.

While the reaction of the professional men who read this description, given in more or less detail, is going to be sometimes favorable and sometimes unfavorable, it is hoped that such a satisfactory accomplishment by a large number of practicing architects in association will appeal as a step forward in community work and civic service, and be of advantage to other groups of architects or cities contemplating a program of a like nature.

PRODUCING SHAKESPEARE

As Illustrated by Walter Hampden's
Production of *Othello*



By Claude Bragdon

SHAKESPEARE'S PLAYS were written to be performed in the Elizabethan theatre, the characteristic features of which were developed from the raised platform built out into an inn yard, the inn galleries and stairways being made use of by the performers. The spectator was required to create the scenes from his imagination, aided only by descriptions and scant suggestions of a highly conventional sort.

Modern plays are written to be performed in the proscenium or "picture frame" theatre, in which the illusion of reality as regards the scene is created for the eye without the aid of the imagination.

It is clear that when Shakespeare's plays are presented in the modern way, in the modern theatre—that is, under conditions alien to their origin—whatever they may gain in verisimilitude, their sweep and continuity must be broken up by frequent waits made necessary by scene and costume changes, during which the interest necessarily flags and the illusion fades—there is an inevitable slowing down of pace and lowering of temperature. The modern dramatist when he writes a play, usually provides against this by having few scenes, and by making the enforced waits conform to corresponding intervals in the action. One way out of the difficulty as regards the production of Shakespeare is to combine and re-arrange the scenes according to some such formula, but whenever this is attempted something of the clarity, the stir of life, the cosmic quality of Shakespeare leaks away.

This is so fully recognized that the other alternative is sometimes chosen—that of reproducing, in one form or another, the essential elements of the Elizabethan stage and therein giving the plays in their integrity, more or less after the

manner in which they were originally produced. The objection to this is that the imagination of the average theatre-goer, fed so long from the optic nerve, cannot comfortably dispense with the aids afforded by modern stage-craft, so he is apt to succumb to a disillusioned boredom, leaving the modernized Elizabethan theatre to a small band of Bardolaters.

There is a third alternative, which is really a compromise between the other two; that is, between the fixity of the Elizabethan stage, which presented at all times the same features, and the flexibility afforded by the modern theatre, wherein each scene can be made to appear entirely unlike every other. If the English language lent itself with any grace to the German polysyllabic form of expression, this third alternative might be described as the modern one-set-slightly-changed-for-each-scene school, for it is the mould into which most of the more recent Shakespearean revivals have been cast. The success of this kind of solution depends of course upon the adroitness of the stage designer in the turning of his kaleidoscope, in which the same elements are made to form a variety of different patterns, each one suggestive of a given place and adapted to the performance of a given action. The outstanding advantages of this scheme or method are unity, economy, speed and directness, but in achieving unity by these means it is difficult to escape monotony; and in effecting economy, by a shade too much of thrift the idea of poverty will be suggested.

In the production of *Othello* for Mr. Walter Hampden I had really no choice between these three alternatives. To do the play "in curtains" after the Elizabethan manner, for a Belasco-fed New York audience, would be to invite disas-

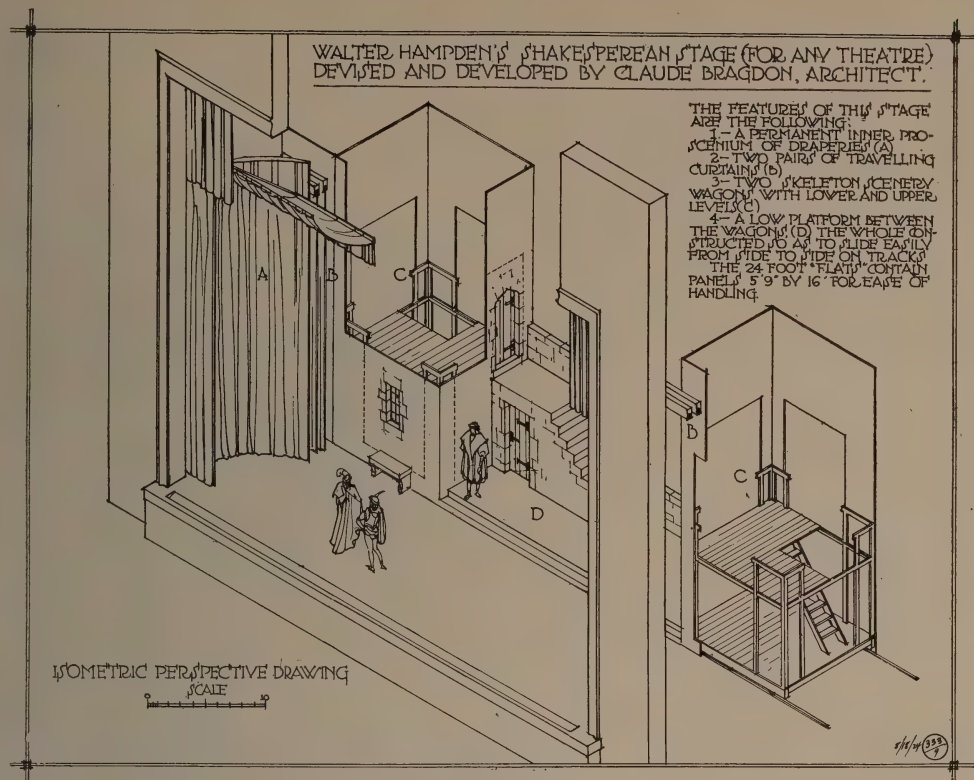


Figure 1

ter, because people simply wouldn't come to such a performance. To make a regular "scenic" production *à la* Irving or Beerbohm Tree would be no less perilous on account of the enormous initial cost. Moreover, as before stated, such a procedure would involve distortions, curtailments and arrestments in the play to which Mr. Hampden, with his deep love of Shakespeare, would never consent. These were my instructions: "The play is to be given as it is written; it must go forward without a pause, almost as rapidly as a moving picture—but we must have a real production for all that." The third alternative—some "permanent set" or unit system—was therefore not so much chosen as imposed.

Moreover, the production of *Othello* with its swift changes and many scenes, was only part of a larger and still more complicated problem—that of providing suitable scenery and accessories for a

number of Shakespearean plays, so that they could be presented on successive evenings in any theatre in any city in the land,—for unless Mr. Hampden was free to go on tour to supplement his New York season and to recoup possible losses, his ambition to re-create the great parts in more beautiful and more powerful projections of the great plays would be impossible of realization. To carry about the country separate and complete productions of several Shakespearean plays is now impracticable, on account of the high cost of transportation and labor, and the constricted storage and stage space in the modern theatres; therefore the thing to do would be to devise some scheme or system whereby a minimum amount of material, differently combined and arranged, could be made to do service, with the admixture of other things, in several plays, without the makeshift (to call it by its basest name) being too apparent to the audi-

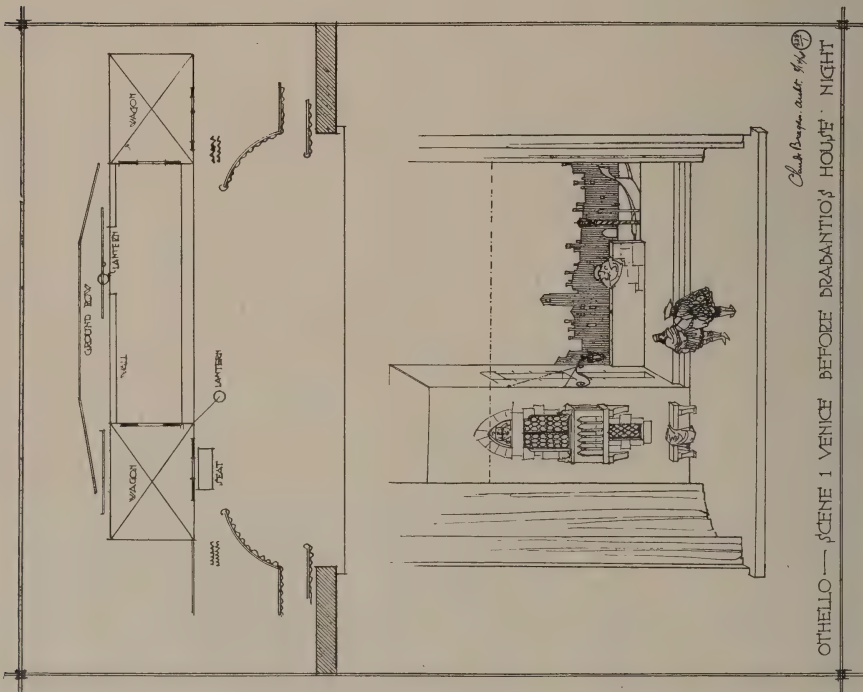


Figure 2

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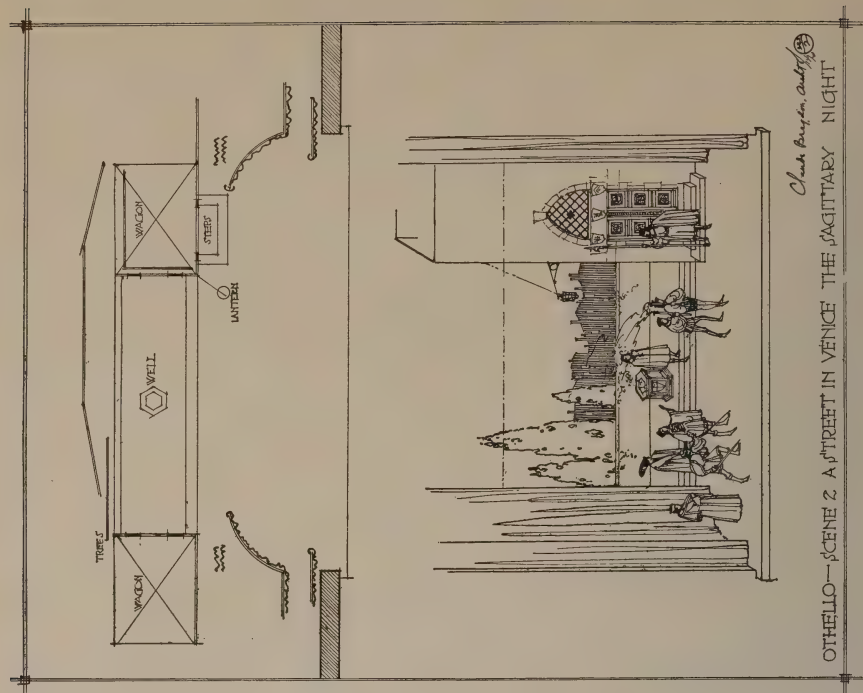


Figure 3

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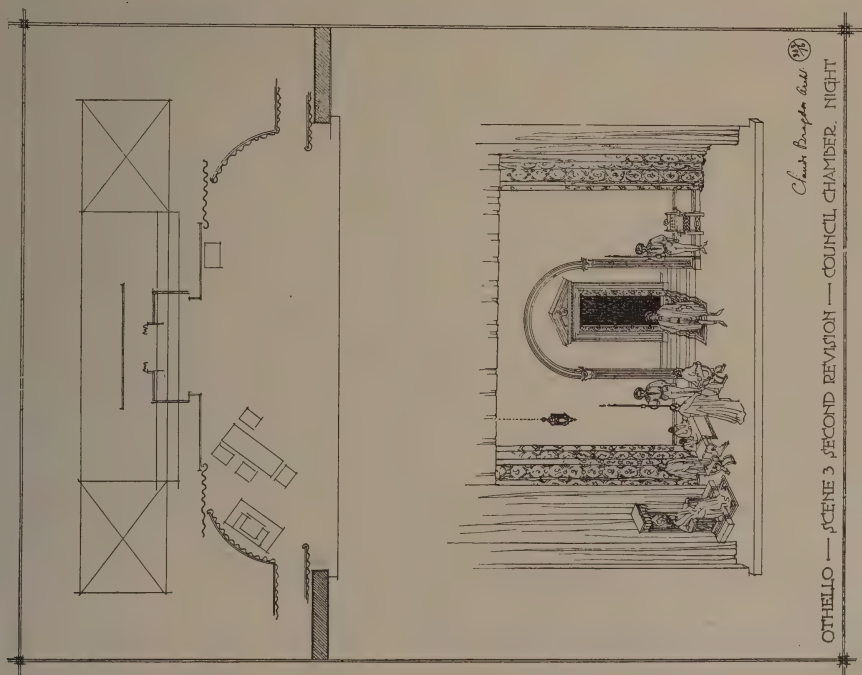


Figure 4

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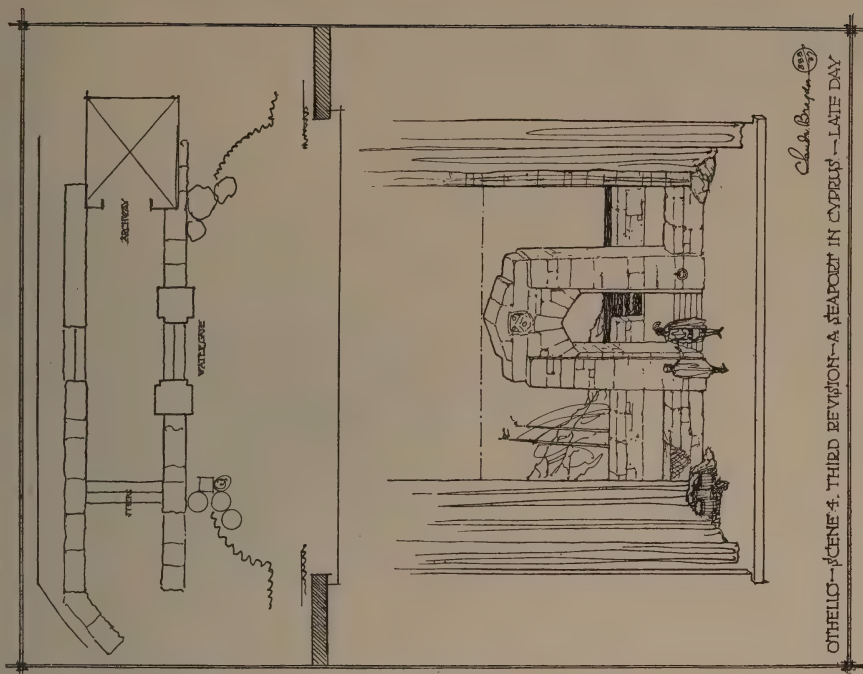


Figure 5

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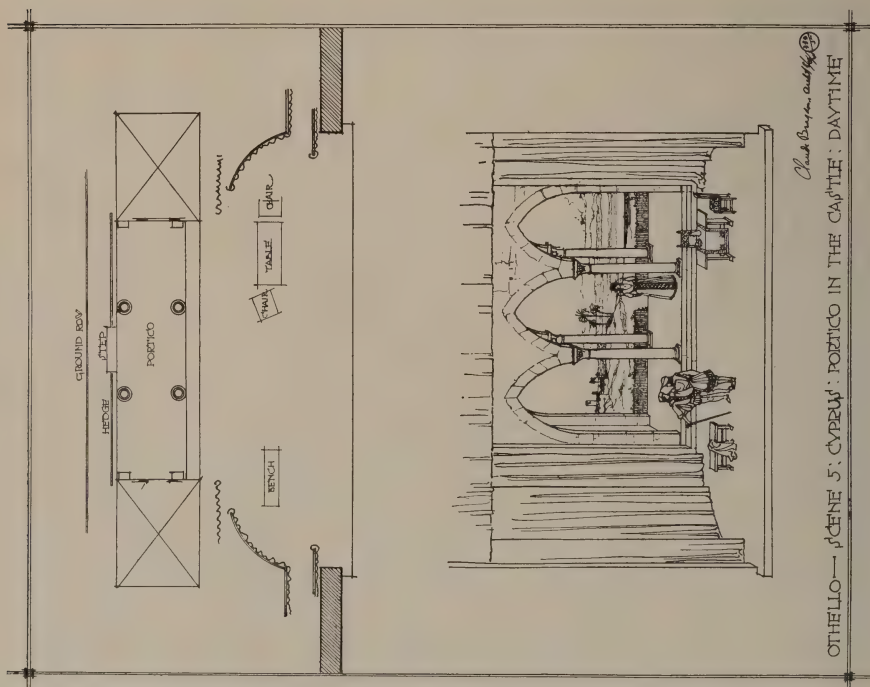


Figure 6

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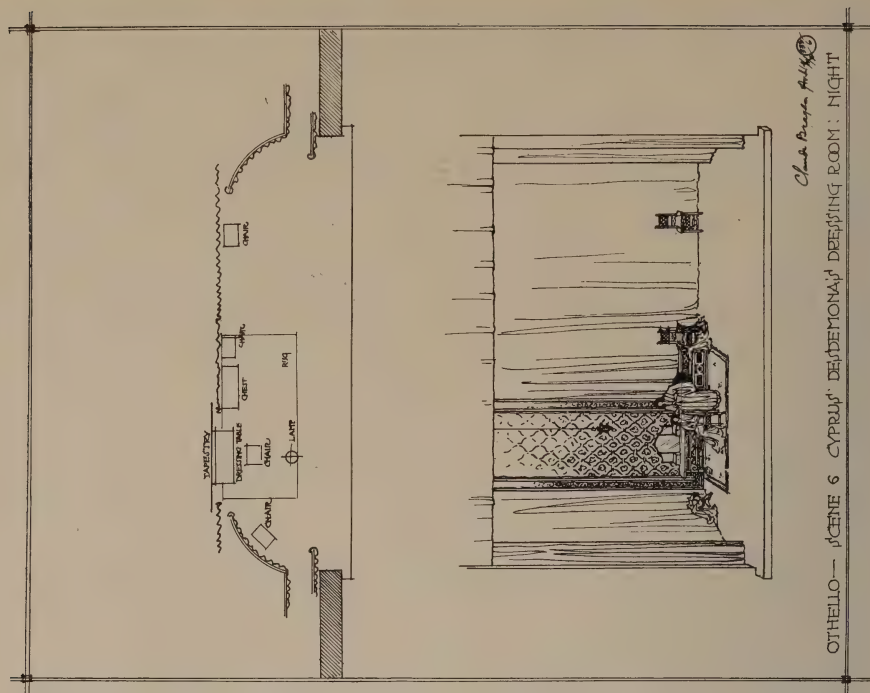


Figure 7

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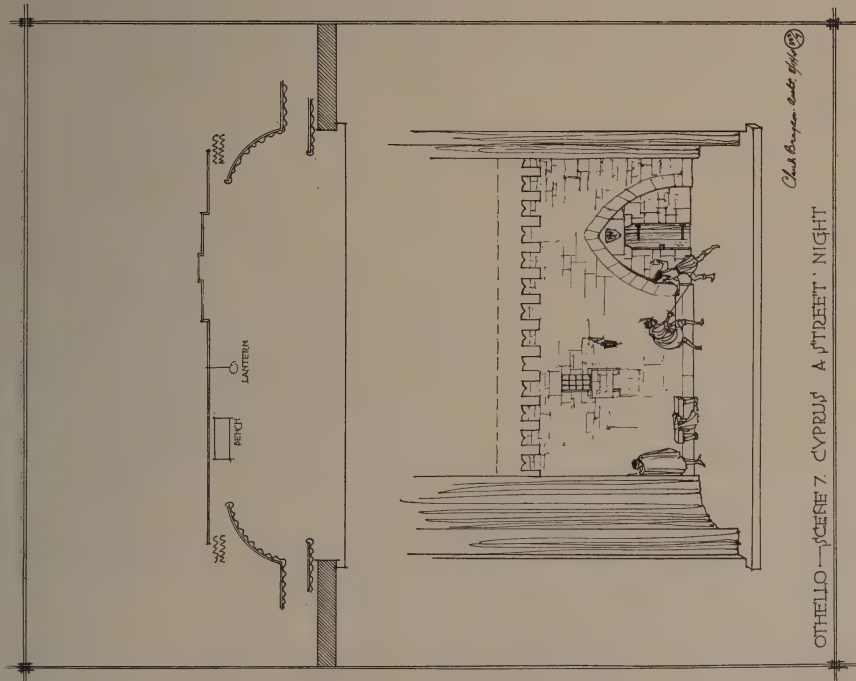


Figure 8

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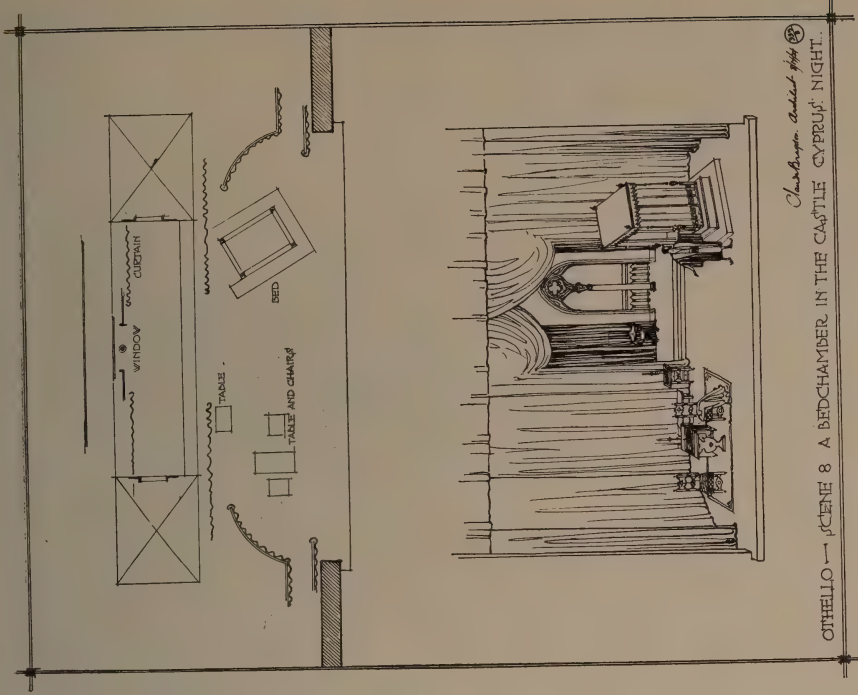


Figure 9

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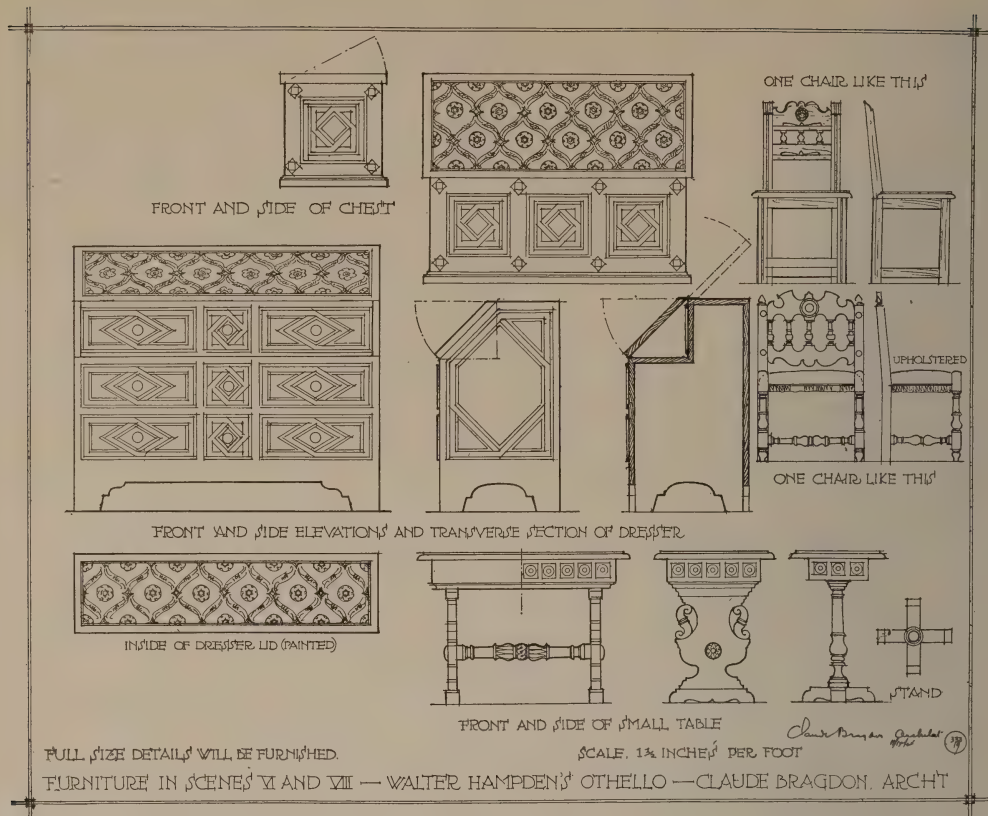


Figure 10

ences before whom they are presented.

This was my problem, stated thus at length, in order that the solution here presented may be better understood. The effort to fulfil these various stern conditions resulted in the permanent stage setting illustrated in Figure 1—an arrangement of curtains, borders, steps, platforms and movable wagons equipped with what might be termed "synthetic" scenery consisting of twenty-four foot flats with sixteen foot interchangeable panels containing doors and windows of different types to be used as required.

More specifically, there is a permanent inner proscenium consisting of concave vertical members covered with dark colored drapery hanging in folds, connected at the top with a gathered and draped border of the same material. If the theatre proscenium be thought of as a picture frame, this inner proscenium

would correspond in a sense to its shadow box—something which isolates the picture and gives it depth. Next behind this are two pair of traveling curtains which can be drawn wholly or partially, or looped back in the center, making an opening of any desired width. Figures 7 and 8 show the function which these curtains perform in the Othello production. Between the curtains and the platform and wagons there is a space sufficient for flats to be inserted, which, extending completely across the stage, permits the setting of one scene while another is in progress. Figures 7 and 9 illustrate two such scenes from Othello, consisting of a row of flats with a single aperture to give a suggestion of mystery and depth to the theme.

Next comes the movable platform, eighteen inches high, eight feet wide, and twenty-four feet long, with steps the

entire length. It is flanked at either end by the skeleton scenery wagons before mentioned, which are eight feet by twelve, with floors at two different levels, the first even with the top of the platform, and the second seven feet above this, or eight feet and one-half from the stage floor. These wagons act as a supporting framework for flats representing the walls of buildings; they have panels which can be taken out and others substituted, thus effecting a change of scene. Back of the platform and wagons is a cyclorama or skycloth of the usual type, with just enough space between it and the platform for ground rows and water rows which, while suggesting distant landscapes, serve also to conceal the pan-lights which illuminate the cyclorama from below.

With these elements a great variety of scenes can be built up. By bridging the

space between the wagons with flats let down from above, continuous walls or variously shaped enclosures can be formed; also, arcades or colonnades, as shown in Figure 6. By withdrawing one of the wagons out of sight and pushing the other on stage just far enough so that its end will be masked by the curtains of the inner proscenium, the effect is obtained of the angle of a great building jutting out into a street or square, as in Figures 2 and 3. Indeed, with the addition of other elements—walls, steps, etc.—many different architectural environments may be presented, or at least suggested, while a floor cloth thrown over the stage and platform, and a ground row or two in front of the cyclorama gives the effect of a field, a heath, a sea-coast—almost any kind of an open place. Cut drops, "leg" drops, or painted and per-

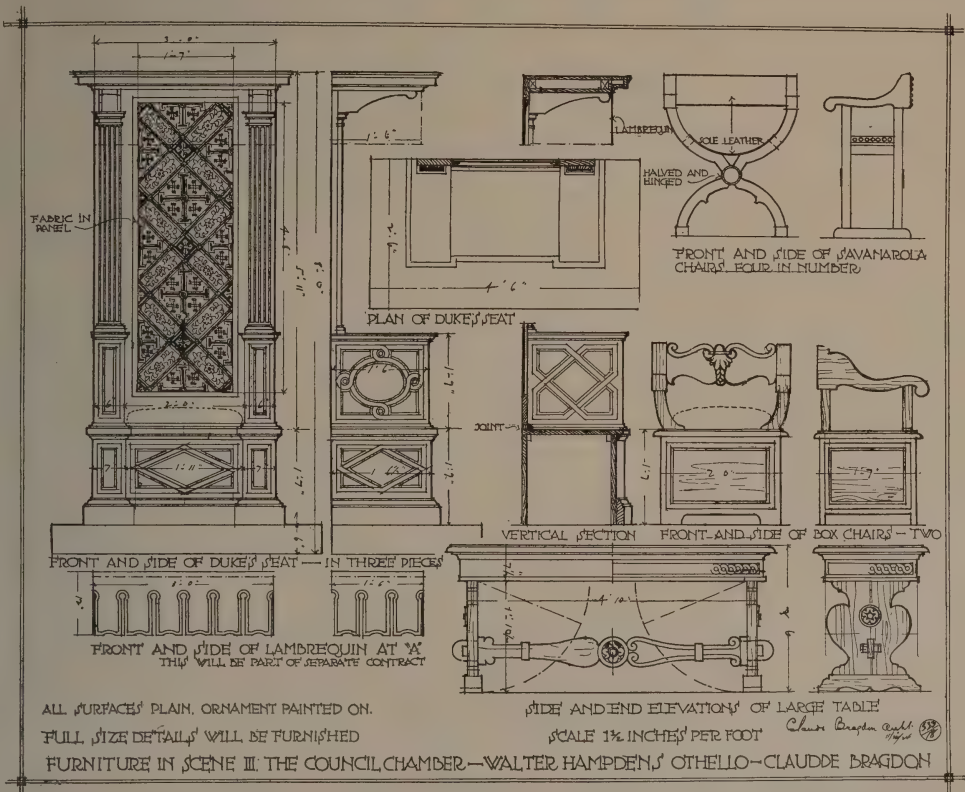


Figure 11

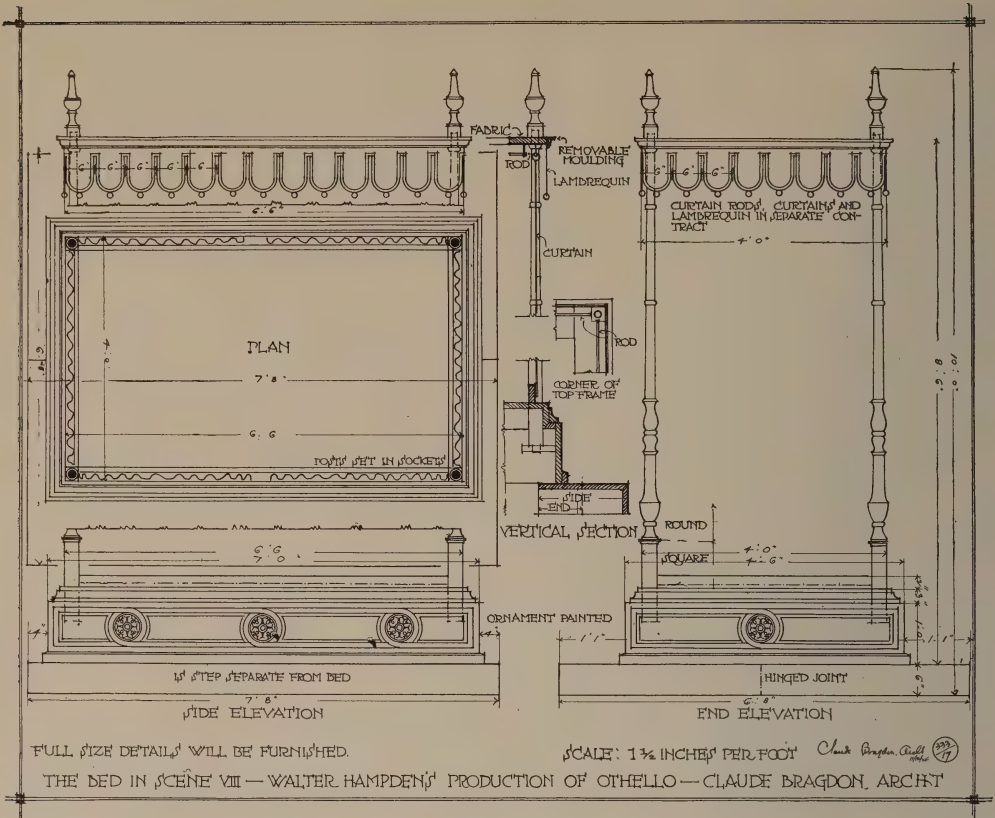


Figure 12

forated curtains interposed between the cyclorama and the inner proscenium can easily be made to represent a forest.

The important thing about a Shakespearean stage scene is not its literal realism or its pictorial quality—there need be only enough of these things to suggest a place or to create a mood—it is its *suitability to the dramatic action* involved; a scene is good only to the extent that it provides a proper platform and background for the actors, affording them effective entrances and exits and ample room to move about. In the Elizabethan theatre there were three levels always available, the stage floor, a first gallery and a second gallery. In this modern version there are also at all times three available levels: the stage floor, the platform (which is also the first floor wagon level) and the second floor level of the wagons. This makes balcony scenes, of which there

are so many in Shakespeare, a matter of no difficulty, and in ensemble scenes the actors can be arranged or grouped on different levels composing vertically as well as horizontally. A scene does not *live* until it is peopled; it should be considered less as a picture than as a picture *frame*. Its success will depend more than anything else upon how it displays the actors and the action; ideally, it should have no existence independent of these things, for it should never attract attention away from them. Stanislavsky says, in *My Life in Art*: "The only king and ruler of the stage is the talented actor, but alas, I cannot find for him a true scenic background which would not interfere with, but would help his complex spiritual work. What is needed is a simple background, but simplicity is the result either of a poor imagination or of a very rich one. I don't know how to keep the sim-

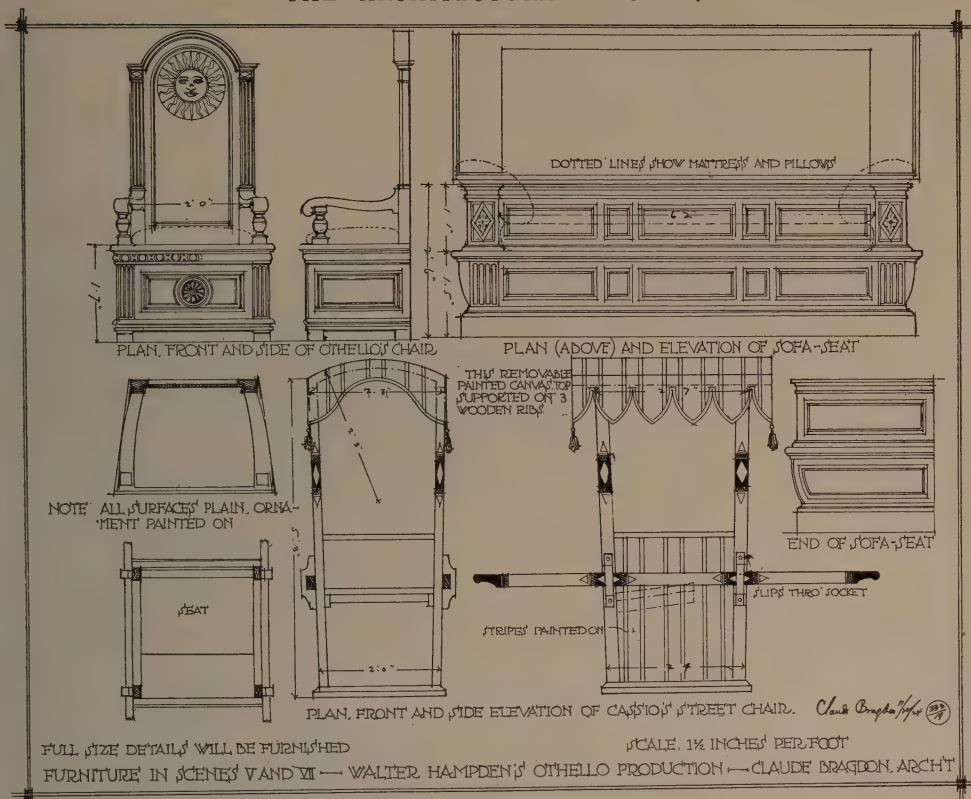


Figure 13

plicity that is the result of rich imagination from forcing itself to the front of the stage even more than exaggerated and rich theatricality."

These words, embodying the ultimate conclusions arrived at by the greatest producer in the world, after he had tried, as he says, "all artistic tendencies, realistic, naturalistic, impressionistic, futuristic, statuary, schematized, exaggeratedly simple," were taken deeply to heart by

Mr. Hampden and myself in the preparation of the Othello production, and while the results are not always exactly what we had imagined them, that production represents a sincere effort to give the play according to its true values, with everything — actors, costumes, properties, scenery, lighting—in just relation, so as to create a single ultimate impression, that of the essential human and spiritual truth of the tragedy of Othello.

— The — ENGLISH PARISH CHURCH AND ITS DETAILS

By
Robert M Blackall

Measured Drawings and Photographs by the Author

THE PORCH AT STRATFORD-UNDER- CASTLE, WILTSHIRE, ENGLAND

THE PORCH at Stratford-Under Castle, Wiltshire, is the simplest of the four shown in these drawings. It is absolutely devoid of any moulding and yet has a charm which cannot be exceeded when a good knowledge of proportions is used. It is built of Cotswold stone, with flint stone about an inch to an inch and a half in diameter. The roof, like that of the church, is a light gray stone field slate.

PORCH IN THE CHAPEL OF ST. LAURENCE, WARMINSTER, WILTSHIRE

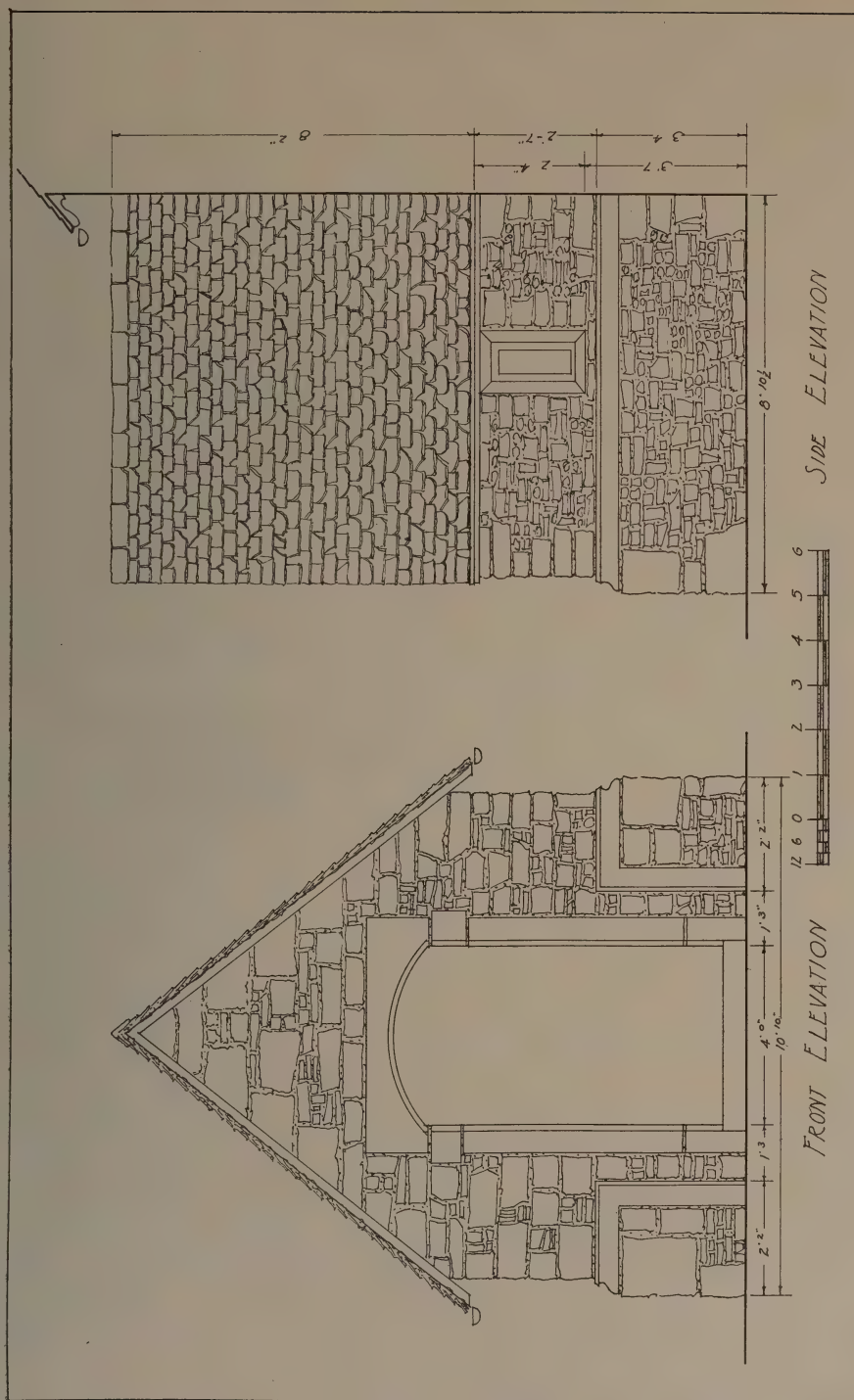
THIS PORCH is fairly modern, and has been built in English Gothic style. The church dates from the early 14th

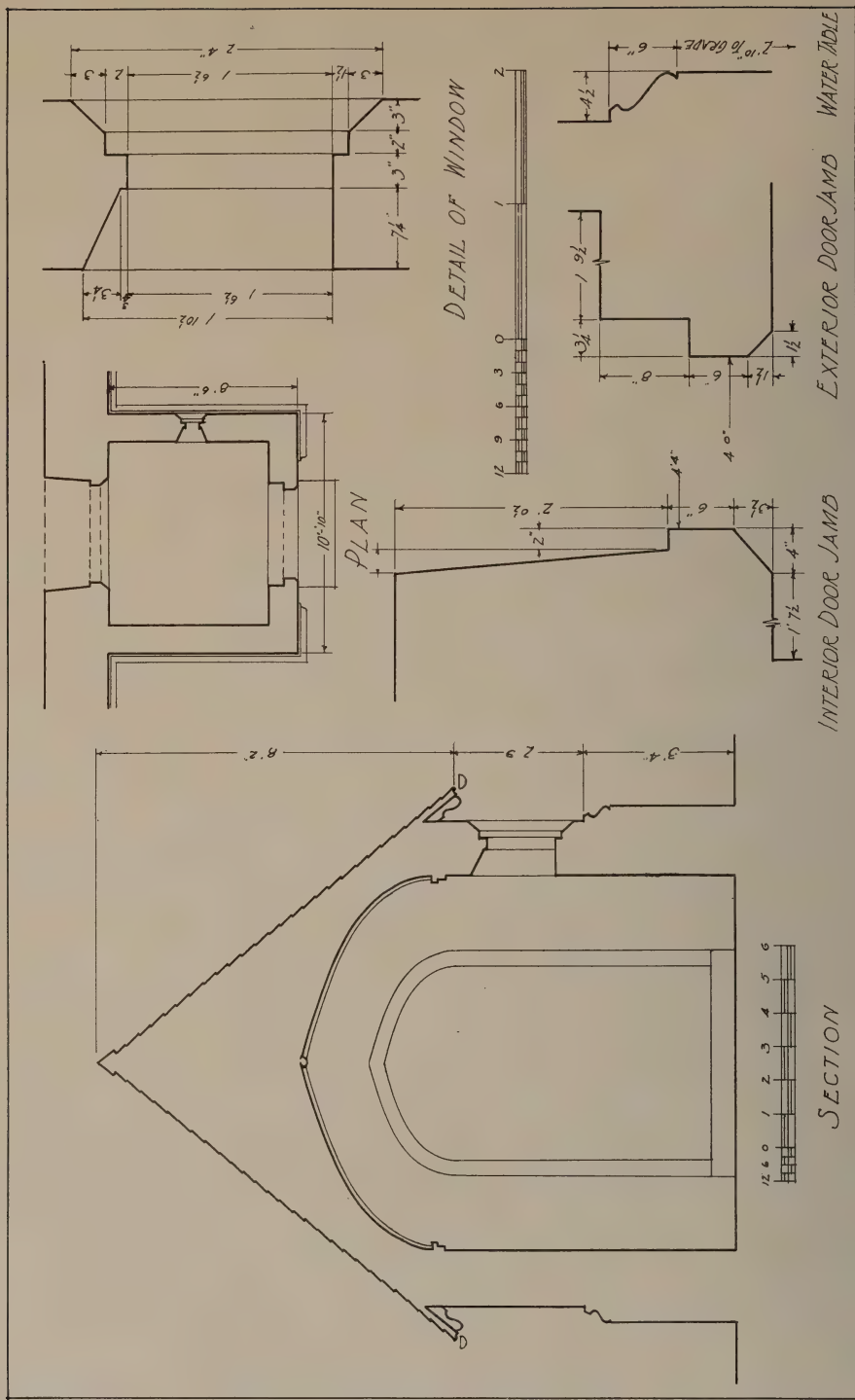
century, although a great deal of modern restoration has been done. It is nevertheless a good

example of the Gothic stone porch, and harmonizes well with the rest of the building. Some of the detail seems to be more French in character than English, although the English stone work, which one rarely finds in France, gives a character to the porch that only the English parish churches have. For true English style the roof is half timber. Unlike so many other churches, the floor is raised two steps above the surrounding ground. This is due more to conditions of site perhaps than to original plan. Nevertheless, as one looks at the porch from the street it gives a very pleasant effect.



PORCH OF THE CHURCH AT STRATFORD-
UNDER-CASTLE, WILTSHIRE, ENGLAND





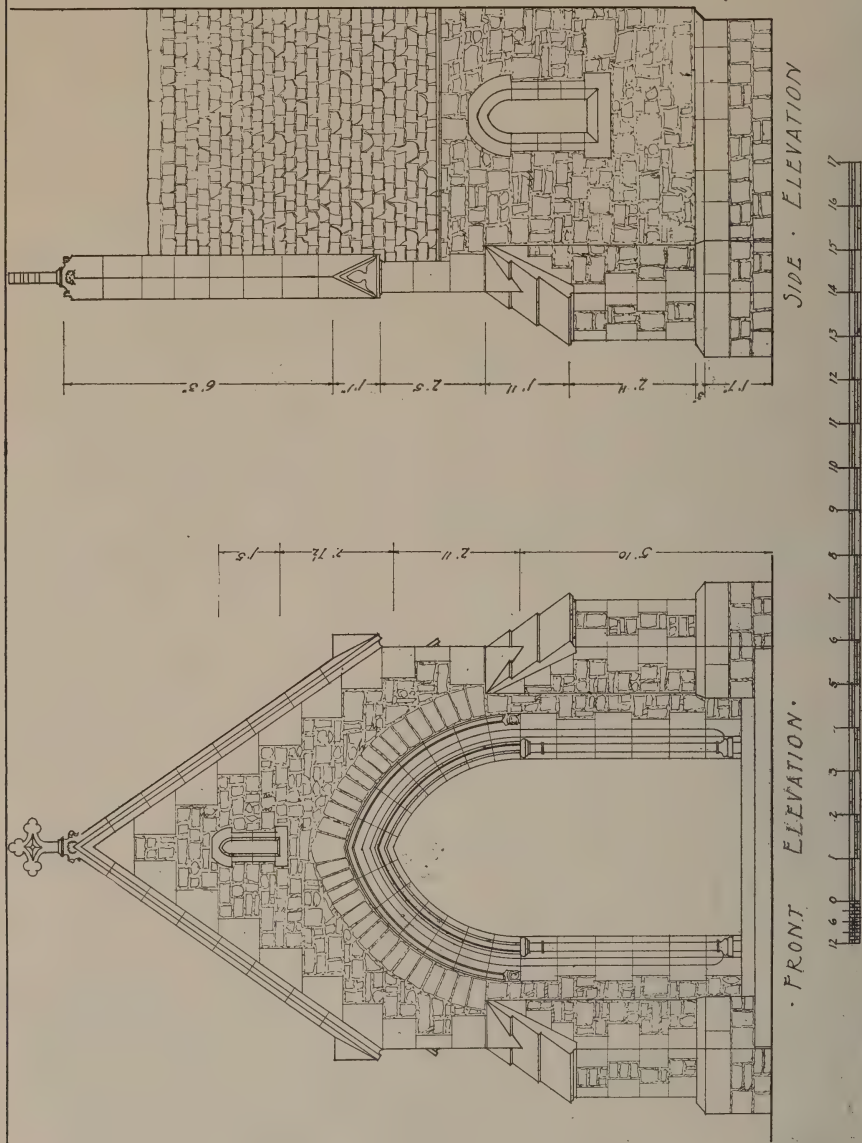
The Architectural Record PORCH OF CHURCH AT STRATFORD-UNDER-CASTLE, WILTSHIRE, ENGLAND March, 1925
 Measured and Drawn by Robert M. Blackall



The Architectural Record

March, 1925

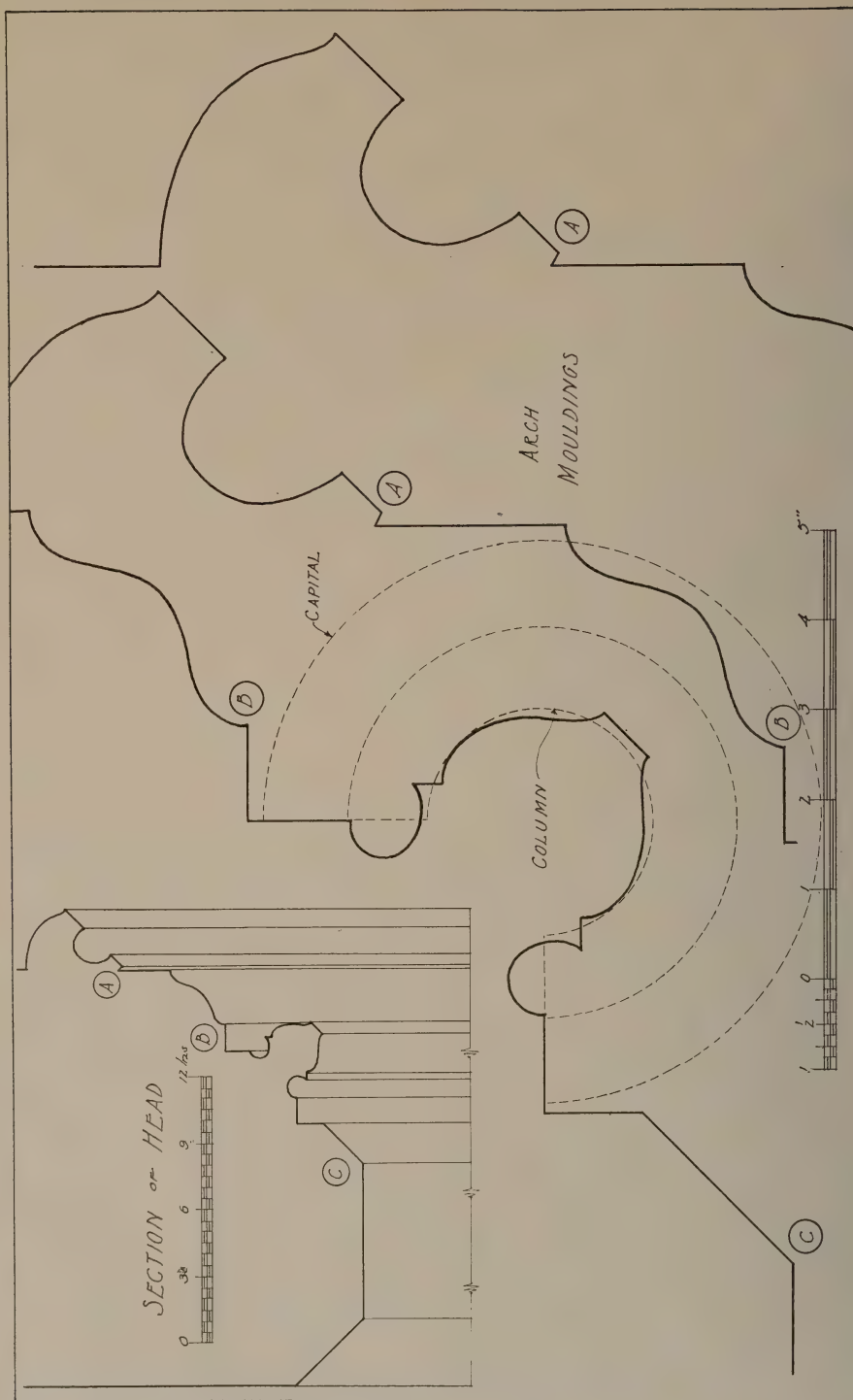
PORCH IN CHAPEL OF ST. LAURENCE, WARMINSTER, WILTSHIRE, ENGLAND
Measured and Drawn by Robert M. Blackall



March, 1925

PORCH IN CHAPEL OF ST. LAURENCE, WARMINSTER, WILTSHIRE, ENGLAND
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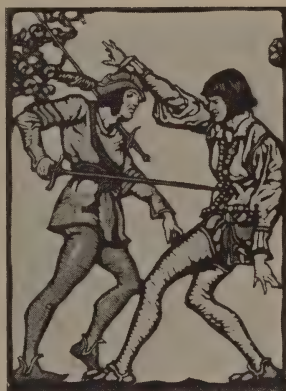




A NOVEL, DECORATIVE METHOD FOR LEADED GLASS

In view of the wealth of technical achievement and decorative invention which has accumulated with the passage of centuries in the art of leaded glass, the assumption would appear justified that the boundary in ingenuity had been reached from every angle. This is however not the case, as is proved by a delightful innovation originated by Scott Williams, who has developed a method which renders leaded-glass a decorative feature in artificial light as well as in daylight. By his process the window becomes capable of a two-way effect instead of depending for its ornamental efficiency upon light in one direction only. The decorative function of the leaded window ceases with the fading of daylight, and the drab color which it assumes under artificial light is a note which is in-

capable of harmonious incorporation in an interior of the less formal type. He conceived the idea that it might be possible to invest it with another variety of interest with the light upon the reverse side; he solved the problem by applying color upon decorative forms silhouetted in lead, a method which he has developed with great ingenuity and success. The windows consist of leaded rectangular panes; he designs to fit the pane subjects in silhouette which are cut out in lead and affixed to the glass or placed between two panes; the silhouetted subjects are then brilliantly colored in a vigorous manner. By the halation of light around them, these colors are effective in daylight; but at night the illumination of the room falling upon the opaque color produces an impression that inlays of brightly colored enamel are set in the dark glass



DECORATIVE LEADED GLASS WINDOWS DESIGNED BY DWIGHT BAUM FOR A FLORIDA RESIDENCE AND EXECUTED BY SCOTT WILLIAMS



A DECORATIVE LEADED GLASS WINDOW BY SCOTT WILLIAMS
The silhouettes are cut out of sheet lead and brilliantly colored



TWO DECORATIVE LEADED GLASS WINDOWS BY SCOTT WILLIAMS
These and all others shown in this article were designed for a Florida residence by Dwight Baum

ground, changing its drab tone to one of decorative value by contrast. In the technique of their color treatment, Scott Williams has assiduously avoided any inclination to simulate that quality of effect which is characteristic of stained-glass; as a result he has evolved something excellent and individual. In addition to the charm he develops in his delightful miniature groups and single figures, birds, and animals, he has created a decorative feature of great utility in the general scheme, as these luminous spots of color perform a valuable function in chromatic distribution, carrying the tones which

occur in the rest of the room across an area which has hitherto been a dead zone in effect. We reproduce a few of the subjects which form part of an extensive series designed for a Florida residence by Dwight Baum. They are very varied in their grouping, pose, and concept of theme; touches of delicate humor and evidences of subtle observation reward one for careful inspection of his compositions. Throughout his work we find a dominant thought controlling invention; that imaginative exuberance must be subject to process—the maxim of the true craftsman; this involves a considerable amount of self-restraint in one who is as imaginatively gifted as Scott Williams. He shows his thorough grasp of the two types of effect in the manner in which each is rendered independent of the other in a separate decorative existence. It is quite a *tour de force* to create a decorative theme which is capable of performing two distinct ornamental functions without making the observer feel that one is a makeshift.

LEON V. SOLON

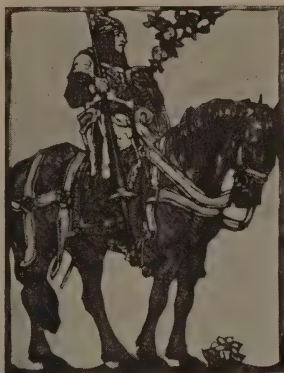
AN OMISSION

We wish to call attention to the omission of the name of Frederick A. Waldron from the captions under the views of the John Hancock Building, Boston, Mass., published in our August, 1923, issue. On the corner stone of the building is cut the following authorship legend: "F. A. Waldron, Engineer-in-Charge. Parker, Thomas & Rice, Architects."

ELOISE OLMSTED

DIED TUESDAY, JANUARY 20, 1925

The ARCHITECTURAL RECORD has sustained a great loss in the sudden death of Eloise Olmsted, Librarian and Desk Editor, who was carried off on January 20 by pleuro-pneumonia



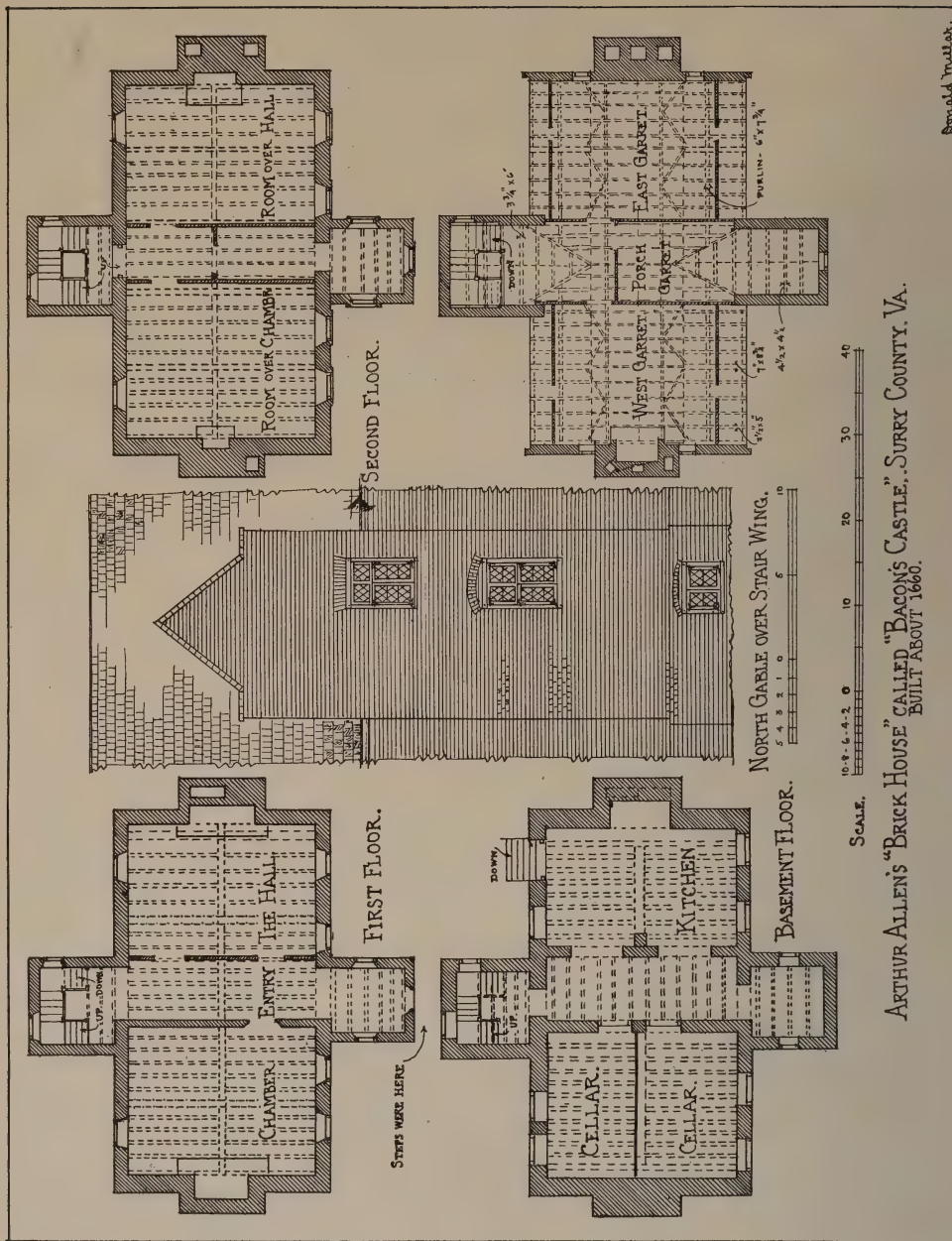
DECORATIVE LEADED GLASS WINDOWS DESIGNED FOR
A FLORIDA RESIDENCE BY DWIGHT BAUM AND
EXECUTED BY SCOTT WILLIAMS

after an illness of only a few days. Miss Olmsted, possessed of far more than ordinary culture and abilities, found in this work a wide and fertile field for her talents and had become a highly regarded member of the organization. Her wide circle of friends and acquaintances in the architectural field, both business and social, sincerely mourn the loss of a valued co-worker and a most interesting and charming personality.

A JACOBEOAN HOUSE IN VIRGINIA

Some miles from Smithfield, Virginia, near the James River, stands the seventeenth century house known as "Bacon's Castle," one of the most interesting houses of the original colonies, having been built by Arthur Allen, who came from England in 1649. Family tradition dates the house from 1654. It was seized by the rebel forces in Bacon's Rebellion of 1675, whence its name. The bricks are of a dark sandy-brown color and have worn well. They are laid in irregular English bond.

A glance at the plates accompanying this article will show a small Elizabethan, or rather Jacobean, manor house, transplanted to the forests of Virginia. It has curved and stepped gables, clustered chimney stacks topping great outside chimneys, and on the front some interesting architectural window-trim in brick, which projects two inches. On the projecting porch the cornice of this trim returns on the wall; on the house wall the cornice is cut off square. The band of white plaster just below the caps of the chimney-stacks gives a note of lightness. The cuts show the house as built, as far as can be determined from a close examination. Originally the interior walls would have been





"BACON'S CASTLE," NEAR SMITHFIELD, VIRGINIA

Probably built by Arthur Allen in 1654

plastered and whitewashed, the doors and staircase being the only woodwork, and the framing of the floors would have been exposed. The rooms are named as they are listed in an old inventory of 1711.

The partition of the first floor is of brick; the screen partition which divides the entry from the hall is, to judge from the inventory, very old. Probably this was originally one room, the plan much resembling several East Anglian manor houses. The use of the word "Chamber" is a survival of the Elizabethan name for the retiring room which still contained a bed. The lower rooms were panelled about 1712, and a stair of that period replaced the original which must have had the same shape. At this time also the old rear windows were closed up and two new ones opened in each room on the first floor. On the east end of the house a large addition was made about 1854 so that this chimney is now covered, but it ran straight up without the shoulders found on the other. The details of this brickwork are shown on the elevations. The construction is excellent and

stands firm after more than two hundred and fifty years.

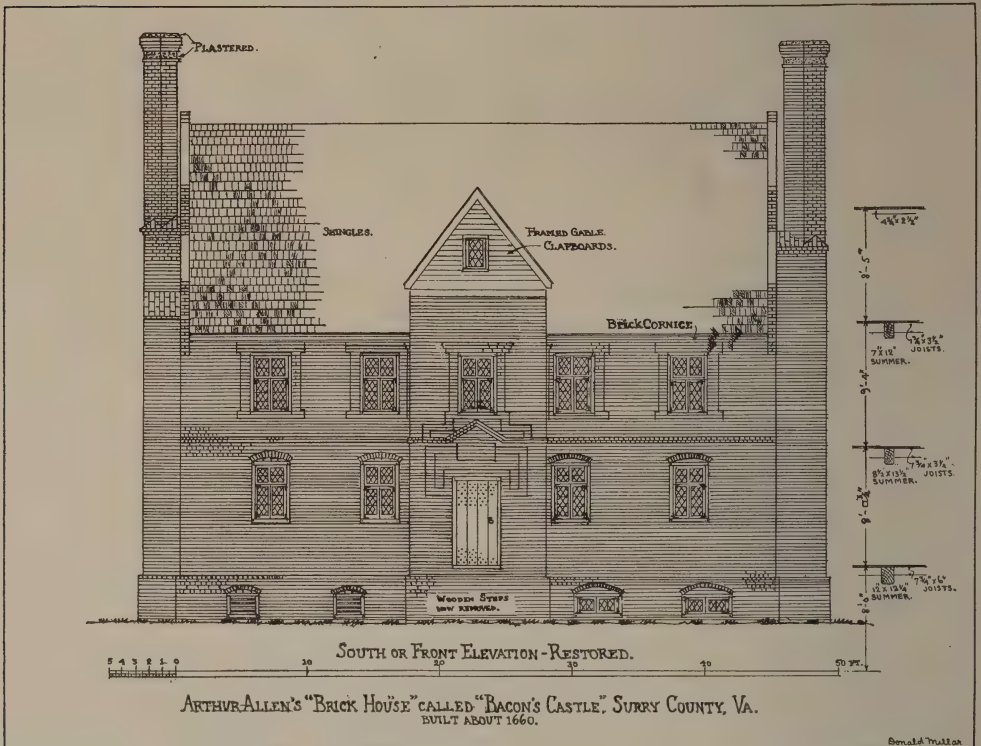
The chamfers of the summer beams are to be seen on the second floor and are quite interesting. The chief interest of the exterior centers in the chimney stacks, gables, and trim of the second story windows on the front, very like certain examples in Norfolk-shire, England, dating from the opening years of the seventeenth century. An old woodcut, made before 1850, shows a curious hood-moulding and pediment of brick over the porch door, but this has all been hacked away and covered with hard cement. An attempt has been made to restore it in the drawing. There is a pointed brick gable over the staircase projection, but it is uncertain whether the front gable was originally of brick or timbered as shown in the old print. The glazing of the windows is shown as old English prints indicate was the custom of the seventeenth century. Probably in this type of house rectangular panes four by six inches were used.

It is in the garret that one finds the least

alteration. The great roof has wind braces from the principal rafters to those at the end and besides the partitions. These spring from just below the ceiling level and rise at an angle of forty-five degrees. The fireplace in the west garret chamber and the long garret over the porch have a most venerable air of old England. The same note of antiquity is apparent in the basement story. The great fireplace has its iron trammel-bar, and brick piers support the framing of the first floor. The entire kitchen is paved with square bricks. The old church at Smithfield, which can hardly be as early as 1632, the reputed date, is of excellent brickwork, having gothic mullioned windows and exhibiting the same East Anglican characteristics. One suspects that they are the work of the same builders.

The present surroundings of the "Castle" are interesting. The old garden lay to the southwest and foundations show that old brick walls ran across the front of the house and probably surrounded it. It is more likely that these walls were ornamental enclosures of garden and forecourt than hastily constructed defences during the time the house was in the hands of the rebel forces in 1675-6. The house is the property of Charles Walker Warren, Esq., and stands on a level lawn with an old detached kitchen behind, on the east the later enlargement and a smaller house, and on the north a farm courtyard surrounded with barns, stables, and other outhouses, in all, some twenty-one buildings.

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The
ARCHITECTURAL
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APRIL

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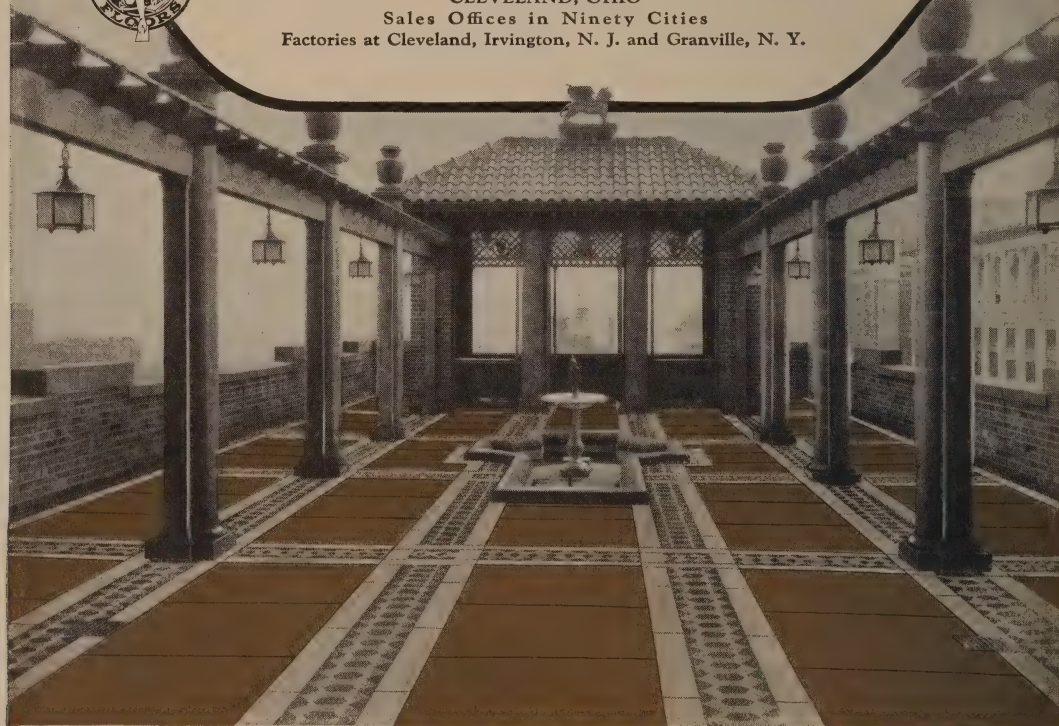
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RAVENNA MOSAIC PANEL
IN
IRIDESCENT AND MATT GLASS

An interesting example of the Modernist feeling applied to pure decoration. Through its kinship to the Primitive Schools, this new phase of artistic interpretation seems better adapted to decoration than to pictorial themes. The representation of plastic form with bands of color lends itself excellently to the mosaic technique.



NOSCUM PROLE
PIA BENEDICAT
VIRGO MARIA

The ARCHITECTURAL RECORD

VOLUME 57

APRIL, 1925

NUMBER 4

"LOUIS SULLIVAN - *An Old Master*"

By Jiske Kimball

... For in all their works they proceeded on definite principles of form and in ways derived from the truth of Nature. Thus they reached perfection, approving only those things which, if challenged, can be explained on grounds of truth.—Vitruvius, Book IV, Chap. ii.

IN LOUIS SULLIVAN America had a great master of realism in architecture. His achievement was not merely provincial or parochial—he belongs with a very few thinkers and designers, leaders of the scientific school of the nineteenth century: Ruskin, Viollet-le-Duc, Gottfried Semper, Otto Wagner. More than to any of these, it fell to him to embody their organic theory in a creation of vital originality, deeply rooted in the new soil of modern life. Not since the genesis of Gothic construction had there been a development like that of the steel frame building, the skyscraper, to which he was the first to give artistic form.

The demand for truth and reason in architecture, the appeal to the laws of nature, is as old as Antiquity. Vitruvius, the arch-villain of the modernists, expressed it, we see, in words which Sullivan himself might have written. So, too, Boileau, the high-priest of French classicism, reiterated, as his central doctrine:

Rien n'est beau que par la vérité,

and Voltaire wrote of his own Temple du Goût:

*Simple en était la noble Architecture;
Chaque ornement à sa place arrêté,
Il semblait mis par la nécessité
L'Art s'y cachait sous l'air de la nature;
L'oeil satisfait embrassait sa structure,
Jamais surpris et toujours enchanté*

Each generation has been able to interpret the doctrine of truth, of obedience to nature, as the guiding principle of its own artistic strivings.

It was in the hands of Herder and Goethe that the idea of relation between art and nature began to take on a modern coloring. From a model of ordered unity, for merely rational imitation, nature became the source of romantic inspiration. The artist, filled with its spirit, in impressing form on his material, accepts the practical necessities, and gives characteristic beauty:

... bis in den kleinsten Theil notwendig schön, wie Bäume Gottes.

The mid-nineteenth century, under the



The Architectural Record

April, 1925

WAINWRIGHT BUILDING, ST. LOUIS, MO.
Adler and Sullivan, Architects



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April, 1925

GUARANTY BUILDING, BUFFALO, N. Y.
Louis Sullivan, Architect



The Architectural Record

April, 1925

TRUST AND SAVINGS BUILDING, ST. LOUIS
Adler, Sullivan & Ramsay, Architects



The Architectural Record

April, 1925

STOCK EXCHANGE, CHICAGO
Louis Sullivan, Architect



The Architectural Record

April, 1925

RESIDENCE OF LOUIS SULLIVAN, CHICAGO
Louis Sullivan, Architect

spell of natural science, identified beauty in painting with minute "truth to nature," and, in consonance with its biologic theory of adaptation of organic form to function and environment, emphasized onesidedly the attainment of beauty in architecture through expression of use and structure. Ruskin wrote in 1851:

"Every building presents its own requirements and difficulties; and every good building has peculiar appliances or contrivances to meet them. Understand the laws of structure, and you will feel the special difficulty in every new building which you approach. . . . And an enormous number of buildings, and of styles of buildings, you will be able to cast aside at once, as at variance with these constant laws of structure and therefore unnatural and monstrous."

Semper in 1860 crystallized the organic theory in the formulae:

"Every technical product a resultant of use and material.

"Style is the conformity of an art object with the circumstances of its origin and the conditions and circumstances of its development."

Viollet-le-Duc in his *Discourses on Architecture* (1863), exalted truth as the supreme merit, and said:

"There are two ways of expressing truth in architecture: it must be true according to the programme of requirements, and true according to the methods and means of construction. . . . fulfil with scrupulous exactness all the conditions imposed by necessity; . . . employ materials with due regard for their qualities and capacities."

Simultaneously, and likewise related to evolutionary theory in biology, came the interpretation of the history of art by Hegel, Taine and Schnaase as a resultant of changing natural and historical conditions.

The predominance of these ideas was fundamentally hostile to every survival



CHARNLEY HOUSE, CHICAGO

Louis Sullivan, Architect



The Architectural Record

April, 1925

Japanese Room, Auditorium Annex
AUDITORIUM HOTEL, CHICAGO

Louis Sullivan, Architect

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or "revival" of historical forms, but the new principles were only gradually driven to their extreme consequences. The classic style, however rationalized, could not justify itself under them as an expression of modern uses. Ruskin still thought the way of salvation lay through Gothic. Viollet-le-Duc, in spite of his enthusiasm for the Middle Ages, came to deny "the propriety of imposing on our age any reproduction of antique or mediaeval art." Semper announced that "the solution of modern problems must be freely developed from the premises given by modernity." He was, himself, however, still content to do his work with historical elements; and Viollet-le-Duc's attempts to deduce new architectural forms from the sporadic employment of iron in construction had little success. They were too purely cerebral, too little *felt*. We must recognize, also, that the problems and materials currently offered to the designer in 1870 had not yet changed enough from those of previous centuries, or yet crystallized enough, to give sufficient basis for a revolutionary change of forms.

A new continent, a new society, a new community, was needed for the realization of modernist ideas. In America commercialism, industrial society, developed unrestrained. Patriotic motives added the call for an "American style" to the more general demand for a "modern style."

In the eighties, while the East sought to assimilate itself to cultivated Europe, the West gloried in the American "innocence" exaggerated by Mark Twain. A conjunction especially favorable existed in Chicago. The great fire left a *tabula rasa*—all was to be made new. For once there was an opportunity for young men in that most difficult and responsible of arts, where the "younger men" are usually past fifty. On the active and independent spirits who were attracted to the city, the ideas of Viollet-le-Duc and Semper made a deep impression. Van Brunt of Kansas City had translated the "Discourses"; John Root in 1889 was to publish excerpts from Semper's work. The Western Association of Architects was founded, with pronounced modern tendencies; a new

journal, *The Western Architect*, gave its sponsors a voice and an audience. There was a ferment of discussion, experiment, and emulation.

In the unregulated commercial exploitation of urban land, a new type was just coming into being, the tall office building. It is a common fallacy to suppose that it was evoked by conditions peculiar to New York, by the circumstance that Manhattan is an island. The enormous preponderance of low buildings on Manhattan, even today, teaches us that the cause lay rather in the absence of legal restriction on the development of preferred sites. It could operate even more freely in the rebuilding of Chicago. Out of the Chicago ferment came the decisive structural invention—first used by William Holabird in the Tacoma Building—the riveted steel frame, carrying the enclosing walls as well as the floors. This frame must be encased for protection against fire. How might its indispensable presence be expressed? How might the monstrous, unprecedented pile be given artistic form?

In Louis Sullivan, Chicago found its poet. Half French, half Irish, he had the analytical mind of a scientist, the soul of a dreamer and artist. Overflowing with romantic enthusiasm for Nature, dazzled by the logical splendor of mathematics, fascinated by Taine and Darwin, abased before the titanic creative power of Michelangelo, he had passed rapidly through the discipline of school and of the Beaux-Arts—assimilating, questioning, feeling. At seventeen enamored of Chicago, its energy, its wide horizons of lake and prairie; at twenty-five already established in a position to build his air-castles; at thirty he was a prophet to youth, in lyrical outbursts of rushing words, enveloping an authentic philosophy.

Among the architects of our day, whose expressed notions are apt to be the *disjecta membra* of inconsistent systems, his aesthetic had an intuitive harmony and value, under "the dominant, all-pervading thought that a spontaneous and vital art must come fresh from nature, and can only thus come." The artist is "to arrest and typify in materials the harmonious

and interblended rhythms of nature and humanity." To him reason and analysis are not all; structure but the first step.

"It would appear to be a law of artistic growth, that the mind, in its effort toward expression, concentrates first upon matters of technical detail, next upon certain abstractions or theories—for the great part mechanical, and quite plausible as far as they go—and at last upon a gradual relinquishment of these, involving a slow and beautiful blending of all other faculties with the more subtle manifestations of emotion."

Sensitive, passionate, and courageous,

he illustrates in his own career that:

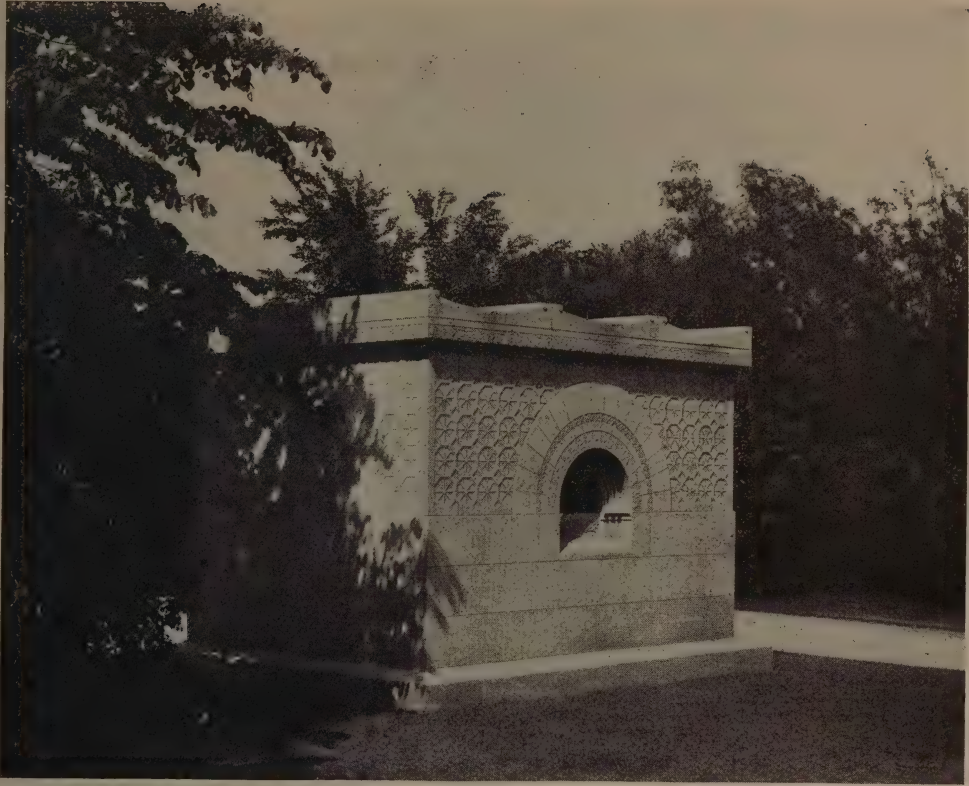
"To the master mind . . . imbued with the elemental significance of nature's moods, humbled before the future and the past, keenly aware of the present, art and its outworkings are largely tragic."

Sullivan's early work, like the work of Root, and so many others of less genius, was colored by Richardson's influence. The treatment of the Auditorium Building (1886-90), with its masonry walls and arches, was suggested by Richardson's design for the Field wholesale store, made in 1885. From Richardson also must have come the first suggestion of



East Entrance, Transportation Building
WORLD'S COLUMBIAN EXPOSITION, CHICAGO

Louis Sullivan, Architect



Getty Tomb
GRACELAND CEMETERY, CHICAGO
Louis Sullivan, Architect

the foliate ornament which Sullivan afterwards developed so characteristically¹, and which flowered especially in the Golden Doorway of the Transportation Building at the Chicago Fair and in the Schlesinger and Mayer store. On the completion of the vast auditorium enterprise followed a breakdown, recuperation, a long communing with nature, a gathering of new forces. The return to Chicago in March, 1890, marks the opening of Sullivan's great creative period.

His first problem was the novel one of the steel-frame office building. "He felt at once that the new form of engineering was revolutionary, demanding an equally revolutionary architectural mode. That masonry construction, in so far as tall buildings were concerned, was a thing of the past, to be forgotten, that the mind might be free to face and solve new prob-

lems in new functional forms. That the old idea of superimposition must give way before the sense of vertical continuity." So he wrote in his autobiography,² a generation later. The Wainwright Building in St. Louis, designed before the close of the year, was the perfect embodiment of this idea. With the taller Guaranty (Prudential) Building in Buffalo, completed 1896, in which the same system is developed and perfected, it represents Sullivan's greatest achievement.

His own interpretation, "The Tall Office Building Artistically Considered," appeared in *Lippincott's Magazine* for March, 1896. Here was formulated most briefly and clearly his whole philosophy of art:

¹A System of Architectural Ornament, Press of the American Institute of Architects, 1924. \$20.00.

²"The Autobiography of an Idea," Press of the American Institute of Architects, 1924. \$3.00.



The Architectural Record

April, 1925

TERRA COTTA CLAY MODEL

Louis Sullivan, Architect

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"It is my belief that it is of the very essence of every problem that it contains and suggests its own solution. This I believe to be natural law. Let us examine, then, carefully the elements, let us search out this contained suggestion, this essence of the problem.

"The practical conditions are, broadly speaking, these:

"Wanted—First, a story below-ground, containing boilers, engines of various sorts, etc.—in short, the plant for power, heating, lighting, etc. Second, a ground floor, so called, devoted to stores, banks, or other establishments requiring large area, ample spacing, ample light, and great freedom of access. Third, a second story readily accessible by stairways—this space usually in large subdivisions, with corresponding liberality in structural spacing and in expanse of glass and breadth of external openings. Fourth, above this an indefinite number of stories of offices piled tier upon tier, one tier just like another tier, one office just like all the other offices—an office being similar to a cell in a honeycomb, merely a compartment, nothing more. Fifth and last, at the top of this pile is placed a space or a story that, as related to the life and usefulness of the structure, is purely physiological in its nature—namely, the attic. In this the circulatory system completes itself and makes its grand turn, ascending and descending. The space is filled with tanks, pipes, valves, sheaves, and mechanical etcetera that supplement and complement the force-originating plant hidden below-ground in the cellar. Finally, or at the beginning rather, there must be on the ground-floor a main aperture or entrance common to all the occupants or patrons of the building.

"The practical horizontal and vertical division or office unit is naturally based on a room of comfortable area and height, and the size of this standard office room as naturally predetermines the standard structural unit, and, approximately, the size of window openings. In turn, these purely arbitrary units of structure form in an equally natural way the true basis of the artistic development of the exterior. Of course the structural spacings

and openings in the first or mercantile story are required to be the largest of all; those in the second or quasi-mercantile story are of a somewhat similar nature. The spacings and openings in the attic are of no importance whatsoever (the windows have no actual value), for light may be taken from the top, and no recognition of a cellular division is necessary in the structural spacing.

"Hence it follows inevitably, and in the simplest possible way, that if we follow our natural instincts without thought of books, rules, precedents, or any such educational impedimenta to a spontaneous and 'sensible' result, we will in the following manner design the exterior of our tall office building—to wit:

"Beginning with the first story, we give this a main entrance that attracts the eye to its location, and the remainder of the story we treat in a more or less liberal, expansive, sumptuous way—a way based exactly on the practical necessities, but expressed with a sentiment of largeness and freedom. The second story we treat in a similar way but usually with milder pretension. Above this, throughout the indefinite number of typical office tiers, we take our cue from the individual cell, which requires a window with its separating pier, its sill and lintel, and we, without more ado, make them *look* all alike because they *are* all alike. This brings us to the attic, which, having no division into office cells, and no special requirement for lighting, gives us the power to show by means of its broad expanse of wall, and its dominating weight and character, that which is the fact—namely, that the series of office tiers has come definitely to an end.

"However, thus far the results are only partial and tentative at best; relatively true, they are but superficial. We are doubtless right in our instinct, but we must seek a fuller justification, a finer sanction, for it. . . . We must now heed the imperative voice of emotion.

"It demands of us, What is the chief characteristic of the tall office building? And at once we answer, it is lofty. This loftiness is to the artist-nature its thrilling aspect. It is the very open organ-tone

in its appeal. It must be in turn the dominant chord in his expression of it, the true excitant of his imagination. It must be tall, every inch of it tall. The force and power of altitude must be in it, the glory and pride of exaltation must be in it. It must be every inch a proud and soaring thing, rising in sheer exultation that from bottom to top it is a unit without a single dissenting line—that it is the new, the unexpected, the eloquent peroration of most bald, most sinister, most forbidding conditions.

* * *

"The true, the immovable philosophy of the architectural art . . . let me now state, for it brings to the solution of the problem a final, comprehensive formula:

"All things in nature have a shape, that is to say, a form, an outward semblance, that tells us what they are, that distinguishes them from ourselves and from each other.

"Unfailing in nature these shapes express the inner life, the native quality, of the animal, tree, bird, fish, that they present to us; they are so characteristic, so recognizable, that we say, simply, it is 'natural' it should be so. . . .

"Whether it be the sweeping eagle in his flight, or the open apple-blossom, the toiling work-horse, the blithe swan, the branching oak, the winding stream at its base, the drifting clouds, over all the coursing sun, *form ever follows function*, and this is the law. Where function does not change, form does not change. . . .

"It is the pervading law of all things organic and inorganic, of all things physical and metaphysical, of all things human and all things superhuman, of all true manifestations of the head, of the heart, of the soul, that the life is recognizable in its expression, that form ever follows function. . . .

"Does not this readily, clearly, and conclusively show that the lower one or two stories will take on a special character suited to the special needs, that the tiers of typical offices, having the same unchanging function, shall continue in the same unchanging form, and that as to the attic, specific and conclusive as it is in its very nature, its function shall equally

be so in force, in significance, in continuity, in conclusiveness of outward expression? From this results, naturally, spontaneously, unwittingly, a three-part division—not from any theory, symbol, or fancied logic.

"And thus the design of the tall office building takes its place with all other architectural types made when architecture, as has happened once in many years, was a living art. Witness the Greek temple, the Gothic cathedral, the mediaeval fortress.

"And thus, when native instinct and sensibility shall govern the exercise of our beloved art; when the known law, the respected law, shall be that form ever follows function; when our architects shall cease strutting and prattling handcuffed and vainglorious in the asylum of a foreign school; when it is truly felt, cheerfully accepted, that this law opens up the airy sunshine of green fields, and gives to us a freedom that the very beauty and sumptuousness of the outworking of the law itself as exhibited in nature will deter any sane, any sensitive man from changing into license; when it becomes evident that we are merely speaking a foreign language with a noticeable American accent, whereas each and every architect in the land might, under the benign influence of this law, express in the simplest, most modest, most natural way that which it is in him to say: that he might really and would surely develop his own characteristic individuality, and that the architectural art with him would certainly become a living form of speech, a natural form of utterance, giving surcease to him and adding treasures small and great to the growing art of his land; when we know and feel that Nature is our friend, not our implacable enemy, then it may be proclaimed that we are on the high-road to a natural and satisfying art, an architecture that will soon become a fine art in the true, the best sense of the word, an art that will live because it will be of the people, for the people, and by the people."

* * *

In Sullivan's actual designs, wall surface was abandoned for a system of pier

and spandrel. That the terra cotta which gave fire-protection was not self-supporting masonry, but merely a casing, was expressed with particular success in the Guaranty Building, by a delicate surface ornament. The height was emphasized by unbroken continuity of the vertical piers, and by their close spacing, between every window, two to each office. Vitally unified in a form deeply felt by its creator, the building became indeed "every inch a proud and soaring thing," filled with the "force and power of altitude."

The achievement was widely recognized and acclaimed. Almost without exception, tall buildings from 1897 to 1912 showed its influence by accented vertical lines. This was scarcely more true in the work of consistent "modernists" like Sullivan, who sought to abandon all historical forms, than of their antagonists, the eclectics. They gave at least lip-service to "structural expression," and turned often to Gothic with its soaring lines. Even the most consistent devotees of abstract form did not remain untouched. In their New York Municipal Building, designed in 1908, McKim, Mead & White marked the lines of the steel columns by shallow vertical strips. Thus in the treatment of the skyscraper Sullivan's creative work attained a historical influence corresponding to its artistic significance.

In many other fields the free and functional mode of design which he championed achieved signal triumphs. Ernest Wilby, working with Albert Kahn, established a characteristic physiognomy for American industrial buildings. Frank Lloyd Wright, a disciple of Sullivan, developed a system of domestic design and an idiom of form which had considerable following in Chicago's sphere.

Abroad, the leaders of the movement, developing independently under similar cultural influences, were certainly later than Sullivan in arriving at a system of new forms. The experiments of Hankar and Horta in Belgium, of Otto Wagner in Vienna, were scarcely begun in 1890. The People's Palace at Brussels, the manifesto of *l'art nouveau*, seems hesitating and inchoate beside the Wainwright building. Indeed the foreign architects

have lacked a great novel problem like the skyscraper to give point to their striving for originality. Wagner's church at the Steinhof, for all its novel treatment of materials, remains a child of the Renaissance by its composition of space and mass. On the other hand, nationalism in Germany, by adopting the "secession" movement as its own, gave it a currency which it never attained in America. Thus Sullivan, whose work at the Chicago Fair attracted foreign attention in 1893, and Wright, whose designs were sumptuously published in Germany, have had more influence there than in their own country.

The general victory which Sullivan long prophesied, indeed, has not come to pass. He realized the defeat, and tried to console himself by hope in a coming generation. To him the outcome was a corruption, a national confession of failure, an evidence that the American people of today had proved unworthy to have a modern architecture.

"Modern," however, is a relative term: its meaning changes from generation to generation. The creative nature of art itself determines that no single formula, however cogent, can long prevail. There is not, as in science, a single, "right" way. Art must change to live; and will change, harmoniously in all its manifestations, through every generation.

The coherence of the realistic treatments of the subject matter of modern life by Sullivan and his fellows was with the work of the realistic schools of the nineteenth century in painting and sculpture, in literature and music. Under the domination of science, the painting of Monet and the impressionists, the sculpture of Carpeaux and Rodin, the music-drama of Wagner, the novels and plays of Flaubert, Zola, Tolstoi, and Ibsen, all sought characteristic beauty through truth to nature, rather than abstract beauty through relations of form.

Against this domination of art by science, this equation of beauty with truth, there began a reaction even before 1890. Cézanne let anatomy and photographic foreshortening in painting give way to formal organization; sculpture became "archaic" and geometrical; there was a

renaissance of verse, of "absolute" music. The counterpart in architecture has been a renewed interest in unity and simplicity of form, as against a functional or dynamic emphasis. As in previous great periods of abstract composition of mass and space, the fifteenth and eighteenth centuries, there has been a reversion to the classic elements, regarded as a universal language of elementary geometrical simplicity. Beginning in New York in the eighties with Joseph Morrill Wells, White, and McKim, triumphing at the Chicago Fair, the movement, American in its genesis, is now pressing on to foreign conquests.

Even the skyscraper, the last stronghold of functionalism, is yielding. Long ago had come a voice of protest, that "instead of constructing first, without pre-occupation with the final appearance, promising oneself to utilize the ingenuity of the construction as the decoration, one should relegate the ingenuities of structure to a position among the secondary means, unworthy of appearing in the completed work." Even as to an effect of loftiness it might be argued that a sheer cliff of bedded stone is as impressive in its height as the serried trunks of the forest. By 1912 the leaders of the formalists, Platt and McKim, no longer compromised. In the tall New York apartments east of Central Park, in the Leader-News Building at Cleveland, the steel frame disappeared again behind sheer unbroken walls, the merits of which lay in uniformity and proportion. The zoning law of 1915 has placed a premium on

varied compositions of mass, and these possibilities of form are now engaging the designers. For better or worse, the problem of expressing the steel frame, so crucial in the nineties, has become a dead issue.

Instead of the forerunner of the new century, Sullivan, we now see, was the last great leader of the old. He was the Monet; Wells the Cézanne. Like Monet, living on into another age, he was within his life-time already an old master.

In the revaluing which accompanies such a change of ideals as has taken place in the past generation, many a reputation has gone down. In their narrow search for truth to nature, for expression of use and structure, too many of the impressionists and functionalists lost all form. The little men have now only a historical position. The quality of greatness, however, is to survive such changes, by fulfilling the new demands as well as the old. The exaltation of an ideal of form has not dimmed the luster of Sullivan's achievement. We find the Wainwright Building, still more the Guaranty Building, simple, crystalline, cast in one jet. In them Sullivan rose superior to any merely mechanical theory of expression. The steel occurs only at alternate piers, yet all are uniform. A unity of form has been arbitrarily achieved. The artist has felt, not calculated. Louis Sullivan lives not merely as the founder of a great school of the past, but as a master who can speak out of the past to pupils of succeeding generations in the eternal language of form.

— The —
ENGLISH PARISH CHURCH
AND ITS DETAILS

By
Robert M Blackall
Measured Drawings and Photographs by the Author

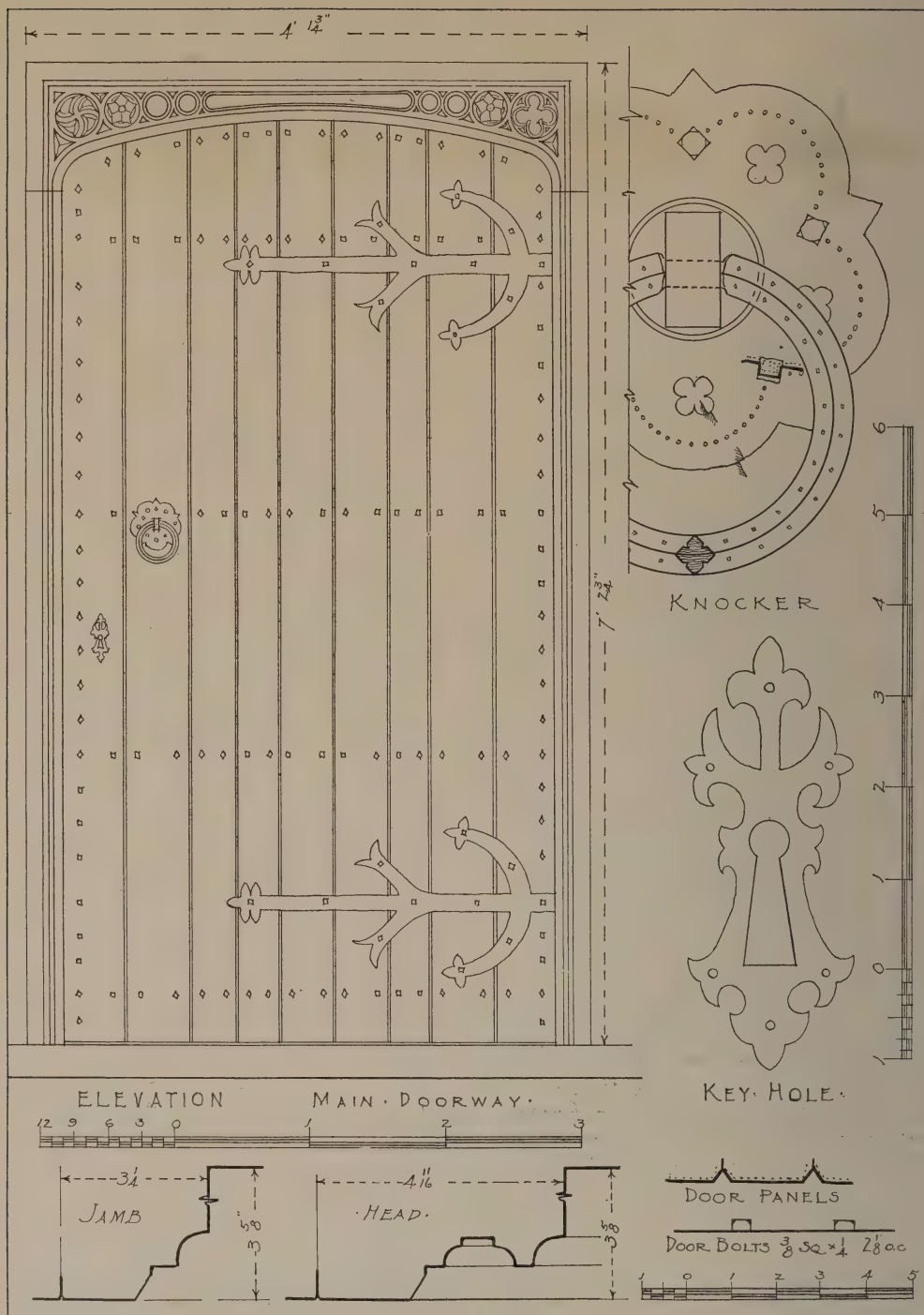


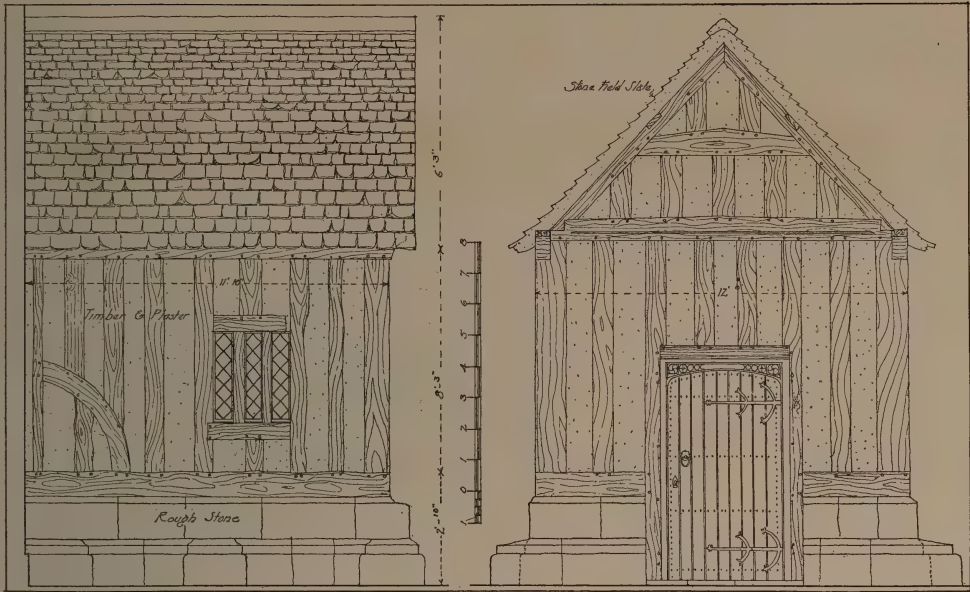
Half-timber Porch



Detail of Door

PORCH OF THE CHURCH AT LONG MARSTON, COTSWOLD DISTRICT, ENGLAND





PORCH OF CHURCH AT LONG MARSTON, COTSWOLD DISTRICT, ENGLAND

Measured and Drawn by Robert M. Blackall

PORCH OF THE CHURCH AT LONG
MARSTON, ENGLAND

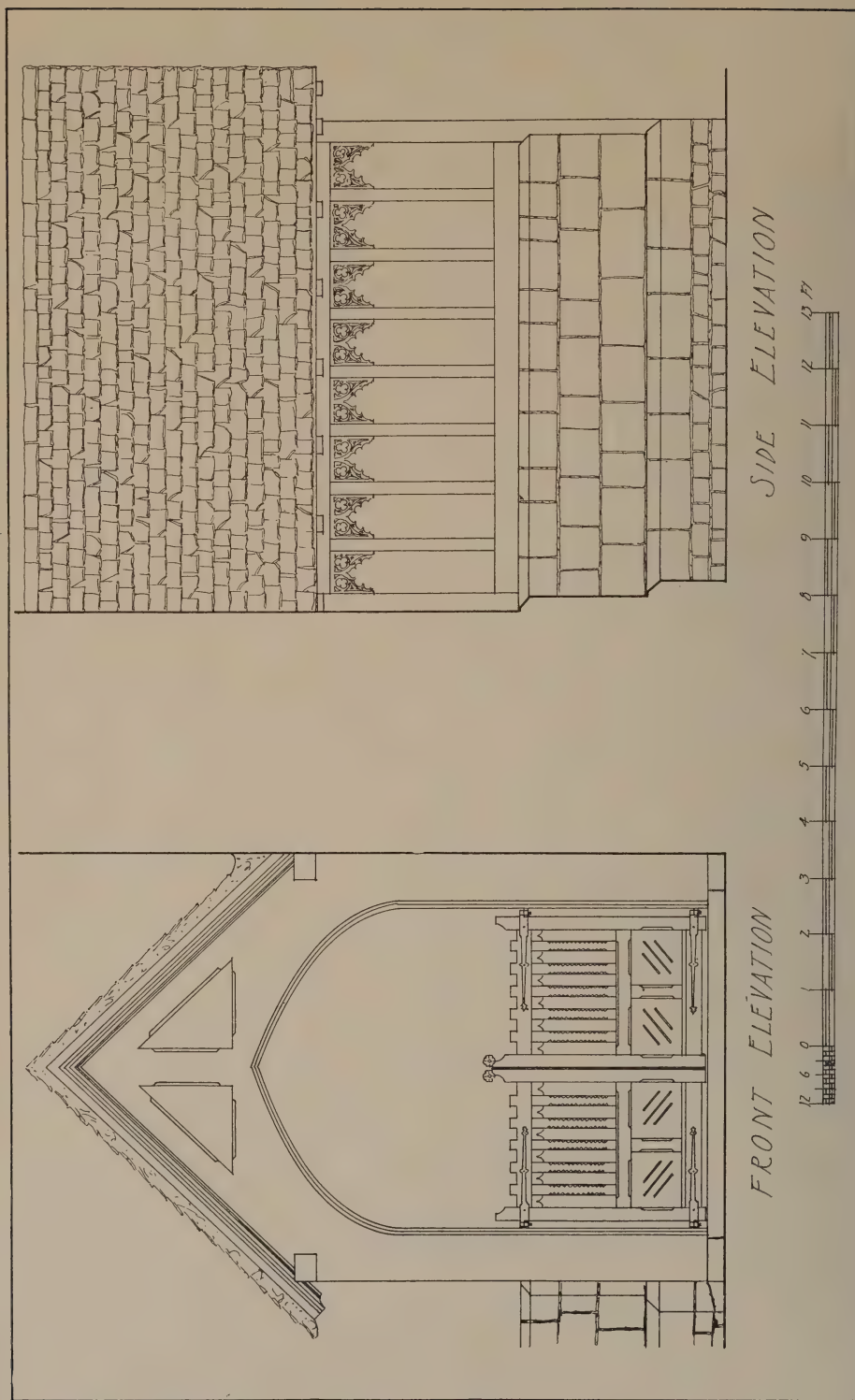
Long Marston is situated at almost the dividing line between the half timber work of the Shakespeare Country and the stone work of the Cotswold District. The church at Long Marston is of half timber and typical of this type of church, fitting in delightfully with the half timber houses in the neighborhood.

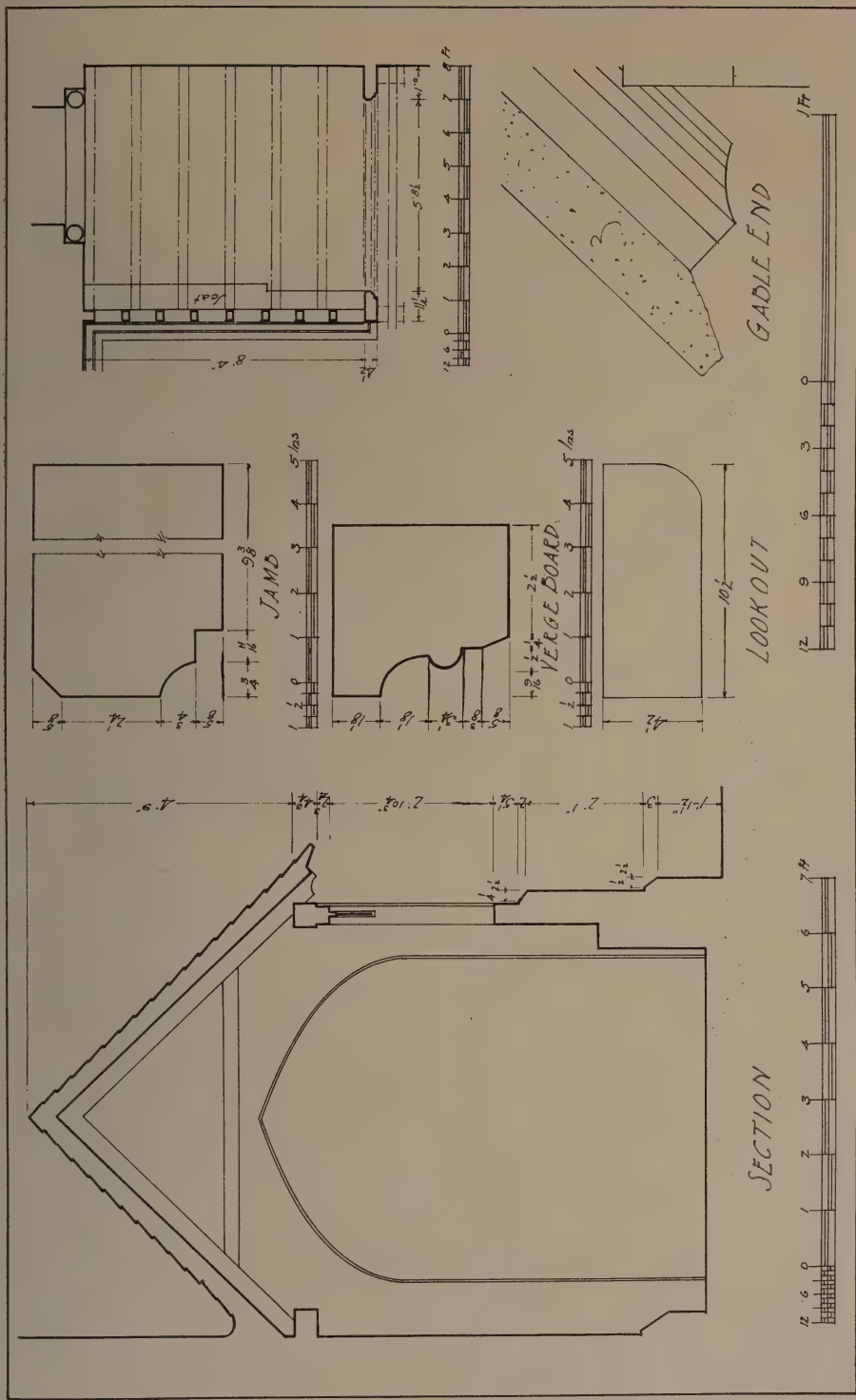
While the door is a modern renovation of the old door, the half timber of the porch is the old original work. The roof is covered with the grey stone field slate typical of the Cotswold house instead of the thatched roof usually seen on the half timbered Shakespearean house.

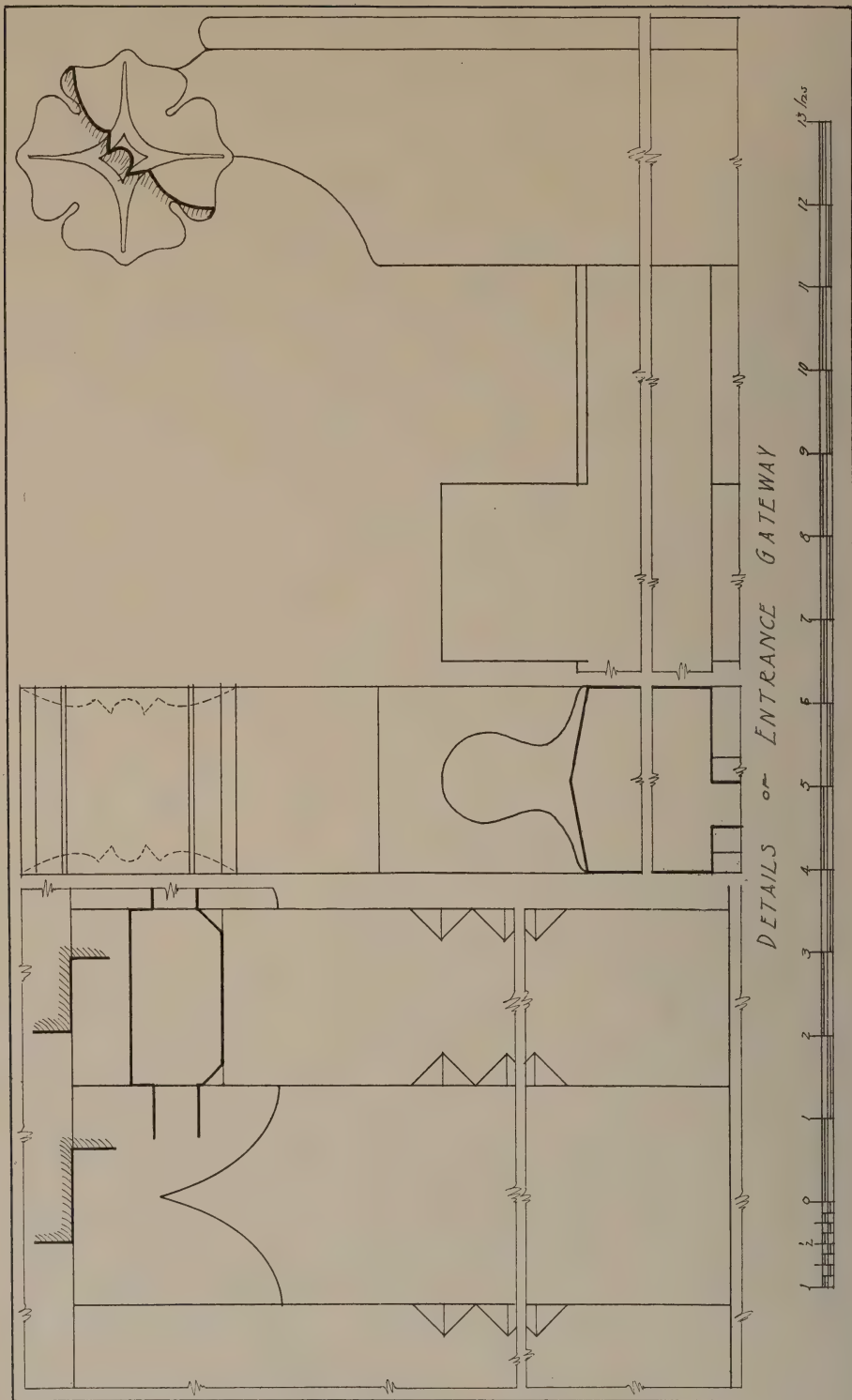
PORCH OF CHURCH AT WIXFORD,
ENGLAND

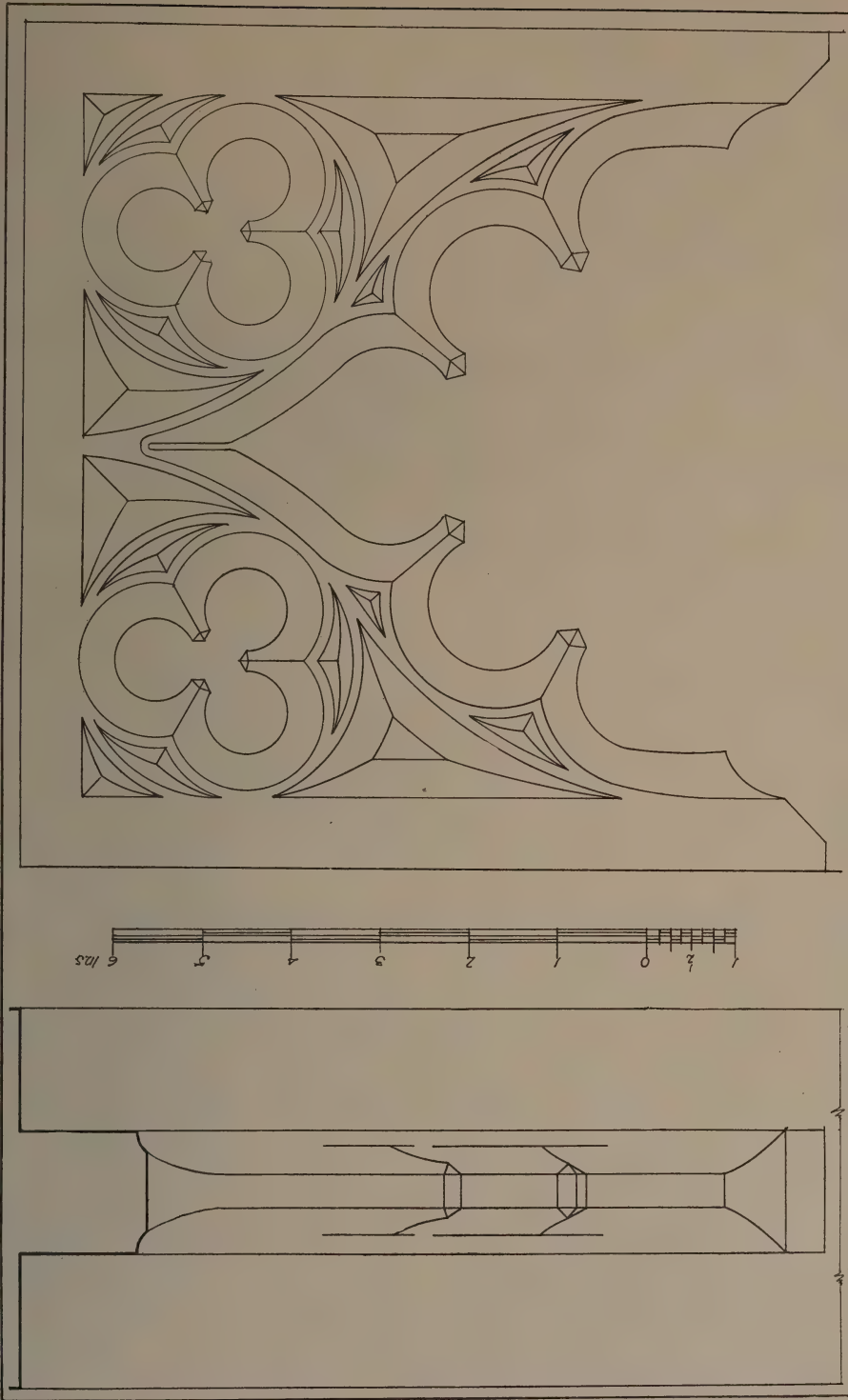
This porch has been built in modern times, but is a good example of the wood work which is being done at the present time in the English parish churches.

Like most of the porches, it sets on a concrete or stone base, with half timber framing, carrying the roof of the porch. The front is entirely of wood, and the verge board, which is out approximately ten inches from the face of the front, is molded, while the remaining rafters in the interior are simple rectangular beams. A little tracing has been placed between the posts on the side, and some of the wood work on the gate has been carved.



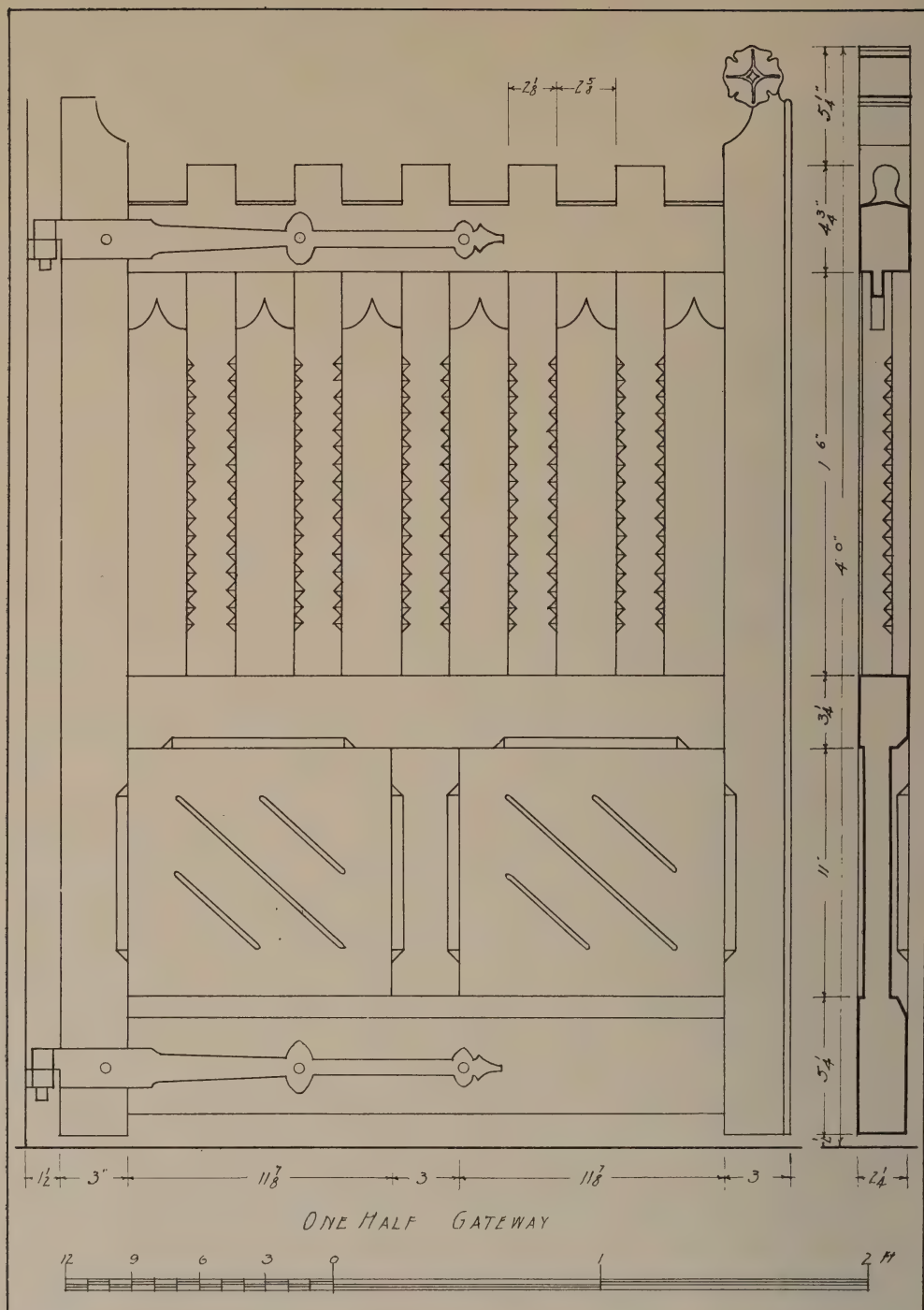






Detail of Porch
 CHURCH AT WIXFORD, WARWICKSHIRE, ENGLAND
 Measured and Drawn by Robert M. Blackall

April, 1925



PAST WRITINGS ON MEDIÆVAL ARCHITECTURE

By
Charles H. Moore

PART II.

WILLIS, WHILE IN his essay on vaulting—published in the *Transactions of the Royal Institute of British Architects*, vol. I, part II, 1842, showing rare comprehension of the principles of such vaulting as he deals with, still follows Rickman in grounding his classifications of mediæval styles or unimportant features and insignificant details. He repudiates Whewell's just conclusion respecting the origin of the use of the pointed arch as a structural necessity in the new vaulting, afterwards carried out in the whole building; and affirms a distinction between what he calls "*Mechanical and Decorative construction*," that has no justification in reason and no existence in genuine art. In his *Remarks on the Architecture of the Middle Ages* (London: 1835), he begins a discussion of this supposed distinction by saying: "The eye, even of an unpracticed observer, when viewing a magnificent building, is never satisfied unless the weights appear to be duly supported, and it receives a corresponding pleasure when that is the case. Hence in all complete styles, part of the decoration is made to represent some kind of construction . . . to be sure, this apparent frame is often totally different from the real one, but so long as the inconsistency is concealed, that is a matter of no consequence. It appears then, that there are two things to be observed in the construction of a building; how the weights are really supported, and how they seem to be supported. The first I shall call the *mechanical*, or actual construction, and the second the *Decorative*, or apparent construction, and it is necessary to make a strong dis-

tinction between them. In the decorative sense it is allowable to speak of shafts sustaining weights which are held up by connection with the wall behind, . . . the mechanical construction is no less important; and above all should be observed the artifices by which it is concealed, and adapted to what is very often a totally different *Decorative construction*" (pp. 15, 16).

Such a notion could arise only from uncritical study of what I have called spurious Gothic building. It is only in such building that shafts have an appearance of bearing weights that are really "held up by their connection with the wall behind." In true Gothic art there is no false appearance of structure. The vaulting shafts of Amiens and Reims are not dependent on walls, since there are no walls on which to depend. A little attention to structure in the French Gothic monuments would dispel this absurd notion. Willis himself virtually recognizes its fallacy, for he goes on to say: "in Egypt and Greece we behold the actual stones of which a building is composed ornamented with mouldings and so decorated as to display their connection, . . . in this case the decorative construction is identical with the mechanical construction; and we may naturally expect to find it so with the works of men unfettered by sophistical notions"—a frank, though unwitting, admission that the art in which his two kinds of construction are found, is sophistical, or what I call spurious.

It should, I think, be obvious that good art is produced only by men unfettered by sophistical notions; and it ought to

be seen that since imperial Roman times, sophisticated art has predominated in Europe, and that in the great complex of what is loosely called Gothic architecture, the only genuine style is that of the Ile-de-France of the twelfth century. For in this French art alone, among the arts of the middle ages, in Western Europe, is structure consistent and duly manifest in every feature, while no false simulations of structure occur.

Among other early English writers, Thomas Hope, in his *Historical Essays on Architecture*, published in 1840, shows further gropings after principles of construction, but no clear grasp of them in any particular. For example, in what he calls pointed architecture, he says: "insulated pillars with intervening openings, were in part substituted for walls," and adds, "In the new fashion architects conceived the idea of making the essential supports and stays of the stone building entirely like those of an edifice put together of wood, or of a timber frame." But the skeleton of piers, arches, and buttresses in Gothic construction is nothing like the frame of a wooden building. It is on a fundamentally different principle. The wooden frame is held together by pinning the parts one to another—cross strains being met by the tension of ties; whereas the Gothic framework of stone is made secure on the principle of compression, thrusts being met by abutments. There is no tensile action in the Gothic framework, which is made up of small stones held together by the action and reaction of balanced forces.

In an almost unintelligible passage, which yet has glimmerings of truth, the writer says: "Like the carcasses of vertebrate animals, are those parts necessary for the general substance and stay of the body—the bones, and spine—moulded into slight masses, distinct from each other, and left between them intervals filled up by yielding flesh and their integuments . . . In the vault, now always made groined, the parts of the arches at right angles with each other, and the intervening cross springers, which were to fall immediately on the

pillars, acquired the exclusive task of supporting directly the timbers of the roof above; and received alone the substance requisite for that purpose; and were converted from continued inclined bodies to ribs and stays, narrow and separate from each other, leaving between them, like pillars, wide insulated spaces: architects only tied the summit of each to that of each of the rest, by transverse beams or joists of stone, called ridge stones, forming to them a sort of spine, and with them a species of reticulation; nay, in order that the separate stays, thus multiplied, might combine, with less width, greater strength, they converted them from wide shallow bands apparent in the Lombard construction, into deep but narrow plates rounded downwards." (pp. 310, 311).

What the writer appears to mean is, I take it, (1) That a Gothic building has a supporting frame, and that the vault shells may be likened to the flesh and integuments in the body of an animal; (2) that the cross springers, or transverse ribs, support the timber roof; (3) that these and the other ribs may be conceived as gathered out of the vault shells—like Mr. Ruskin's columns gathered out of a wall; and (4) that the members called ridge ribs (which do not, however, occur in true Gothic vaulting), function like beams or joists of stone. His first point, namely, that the building has a supporting skeleton, is true of the pure French Gothic, but of no other mediæval architecture. His second point is, however, entirely erroneous; for the transverse ribs, or cross springers, do not at all support the timber roof, or have any connection with it. The timber roof is an altogether independent covering which rests on the piers that rise from the ground—its tie beams clearing the vaulting by several feet. His conception of the ribs as members gathered out of the vault shells, as it were, ignores the fact that the rib system is in no way incorporated with the vault shells, but is wholly independent of them—merely furnishing a support on which they rest. His remarks on what he calls beams or joists of stone, involve essential error;

for these members are not coherent like beams of wood which are self supporting throughout their lengths when supported at the ends. They are composed of small separate stones, held together by compression on the principle of the arch.

Later English writers proceed on the same lines as their predecessors. Ferguson, for example, in his *History of Architecture in all Countries*, begins his section on that of England by saying: "It is perhaps not too much to assert that during the middle ages architecture was practised in England with greater success than among any of the contemporary nations. In beauty of detail and elegance of proportion the English cathedrals generally surpass their continental rivals. It is only in dimensions and mechanical construction that they are sometimes inferior" (vol. 2, p. 119). Rightly urging the importance of study of the monuments, he says: "for the purpose of such a study, the English mediaeval architecture is, perhaps, the most complete and perfect. Nowhere else can the gradations of change be so easily traced; and in no other style was there so little interference from extraneous causes." The writer offers no reasoned discussion in support of this affirmation. He writes in manifest ignorance of the real character of the French Gothic style, in which alone it will, I think, be found that the creative developments of Gothic art were worked out.

Parker, in his *Introduction to the Study of Gothic Architecture*, published in 1849, is equally emphatic. He says (p. 217): "The English Gothic is as thoroughly national as that of any other country; perhaps, from our insular position, it is even more distinct and independent than that of any other people." And again (p. 219) he declares: "The Gothic of England is more perfect, more pure, more systematic, better proportioned, more consistent, than that of any other country."

Nor, with few exceptions, has better work been done on the continent. French writing on the subject begins virtually with De Caumont in the twenties of last century. This writer, in his *Abécédaire*

d'Archéologie, gave a wrong direction to methods of investigation and classification, by, like Rickman, making details the basis of his system. Thus, through the great popularity which his writings promptly attained, he had a harmful influence on subsequent French studies of the subject. It was not until the middle of the nineteenth century that the study of mediaeval architecture was put on a right foundation by the genius of Viollet-le-Duc, who saw that the primary characteristics of styles arise from structure. Through quick apprehension of the principles of construction in each of the different types of mediaeval building, and through strenuous first-hand examination of the monuments, he became pre-eminently competent as a writer. For accuracy of observation and clarity in description, he has not been equalled by any other writer. No warping of judgment from patriotic zeal, nor any obscurity of language, will be found in his works. Minor errors, such as no man, however competent and careful, can wholly avoid, may sometimes be met with in his writings, but they are rare. The personal equation counts for little in his works, because he wrote from experience, with a mind intent on observed facts.

Viollet-le-Duc has had no followers. No other writers have started with like aptitude, and equipped themselves by so solid attainments. Adverse influences, academic and popular, have prevailed against his teaching. Thus the later French literature on the architecture of the middle ages has continued on the lines of De Caumont, with a very few partial exceptions—notably that of Quicherat, who, under the influence of Viollet-le-Duc, strove to take due account of structure as a determining factor in the making of a style. But Quicherat's apprehensions of structure were not profound. His genius was not of a sort to lead him far in this direction. Of actual contact with buildings and building operations, of a kind to quicken insight into mediaeval principles of structure, he had no adequate experience. Like most other recent French writers, he was an *archiviste*

paléographe, and thus inclined to give first importance to the study of written documents, and to forget that the documents which chiefly matter are the extant buildings themselves. Quicherat—as indeed Viollet-le-Duc himself while feeling his way in the unexplored field—lays stress on geographical variations of styles, and does not see that these variations are for the most part unessential, consisting largely of mixtures of incongruous elements, borrowed from different sources and assembled without creative changes in adaptation to new

conditions—as the barrel vaulting of Southern Gaul, derived from the ancient Roman buildings of that region, coupled with grouped supports fashioned after those of the organic vaulted Romanesque of Lombardy; and the domes on pendentives over long naves, of the Périgord—as well as countless other heterogeneous mixtures which make up the vast bulk of spurious building which I have mentioned earlier in this article.

We cannot here go on to consider the writings of other continental countries, but they are not materially different.



The LIBRARY OF THE ARCHITECT



By
A Lawrence Kocher

PART VIII

SELECTED LIST OF STANDARD WORKS RELATING TO ARCHITECTURE AND INTENDED FOR OFFICES OF ARCHITECTS

ORNAMENT

BRAGDON, CLAUDE F. Projective ornament. Rochester, N. Y., 1915.

HAMLIN, A. D. F. A history of ornament. N. Y. 1916-23. 2 v.

JONES, OWEN. The grammar of ornament. London, 1856.

A useful work for ornament in color.

MATÉRIAUX et documents d'architecture et de sculpture classés par ordre alphabétique. Directeur: A Raguenet. Chicago, 1872-1914. 10 v.

MEYER, FRANZ SALES. Handbook of ornament. N. Y. n.d. \$3.50.

PIRANESI, GIOVANNI B. Vasi, condelabri, cippi, sarcofagi, tripodi, lucerne ed ornamenti antichi. Roma, 1778.

RACINET, A. L'ornement polychrome. Paris, 1873-86. 2 v.

SPELTZ, ALEXANDER. Das farbige Ornament aller historischen Stile nach eigenen Aquarellen. 1914-23.

———. The styles of ornament from prehistoric times to the middle of the XIXth century. London, 1910. \$10.00.

WEYHE, E. Ornament. N. Y., 1924.

LANDSCAPE ARCHITECTURE, CITY PLANNING

ADSHEAD, S. R. Town planning and town development. London, 1923.

BLOMFIELD, SIR REGINALD T. The formal garden in England. London, 1892.

ELIOT, CHARLES W. Charles Eliot, landscape architect. Boston, 1902.

GODFREY, WALTER H. Gardens in the making; designs by the author and Edmund L. Wratten. London, 1914.

HARVEY, WILLIAM A. The model village and its cottages; Bourneville. London, 1906.

HAVERFIELD, F. J. Ancient town planning. Oxford, 1913.

JEKYLL, GERTRUDE AND LAWRENCE WEAVER. Gardens for small country houses. London, 1914.

LATHAM, CHARLES. The gardens of Italy. London, 1905.

LEYLAND, JOHN AND HENRY A. TIPPING. Gardens old and new; the country house and its garden environment . . . London, 1900-08. 3 v.

REPTON, HUMPHREY. Observations on the theory and practice of landscape gardening. London, 1803.

TRIGGS, HARRY INIGO. The art of garden design in Italy. London and N. Y., 1906.

———. Formal gardens in England and Scotland. London, 1902.

———. Garden craft in Europe. London, 1913.

———. Town planning, past and present. London, 1909.

For Italian gardens see Italy.

BOOKS ON THE ARCHITECTURE OF

COLONIAL AMERICA AND OF THE EARLY REPUBLIC

BACH, RICHARD F. Books on colonial architecture listed in *The Architectural Record*, v. 38, 39 and 40.

BAXTER, SYLVESTER. Spanish-colonial architecture in Mexico. Boston, 1901.

BENJAMIN, ASHER. A reprint of The country builder's assistant, The American builder's companion, The rudiments of

architecture, The practical house carpenter, Practice of architecture by Asher Benjamin. Edited with text by Aymar Embury II. N. Y., 1917.

BROWN, GLENN. History of the United States Capitol. Washington, D. C., 1900.

CHANDLER, JOSEPH EDWARD. Colonial architecture of Maryland, Pennsylvania and Virginia. Boston, 1900.

——— The colonial house. N. Y. 1906.

COFFIN, LEWIS A. AND A. C. HOLDEN. Brick architecture of the colonial period in Maryland and Virginia. N. Y., 1919. \$16.50.

CORNER, JAMES M. AND E. E. SODERHOLTZ. Examples of domestic colonial architecture in Maryland and Virginia. Boston, 1892.

——— Examples of domestic colonial architecture in New England. Boston, 1891.

CRANE, EDWARD A. AND E. E. Soderholtz. Examples of colonial architecture in Charlestown, South Carolina and Savannah, Ga. Boston, 1895.

CUNNINGHAM, HARRY F. AND JOSEPH A. YOUNGER. Measured drawings of Georgian architecture in the District of Columbia; 1750-1820. N. Y., 1914.

COUSINS, FRANK. Colonial architecture, (Fifty Salem doorways). N. Y., 1912.

EBERLEIN, HAROLD D. The architecture of colonial America. Boston, 1915.

ELWELL, NEWTON W. Architecture, furniture and interiors of Maryland and Virginia during the 18th century. Boston, 1899.

EMBURY, AYMAR II. Early American churches. N. Y., 1914. Appeared originally in the *Architectural Record*.

——— The Dutch colonial house. N. Y., 1913.

An inadequate account of the Dutch colonial house.

FRENCH, LEIGH. Colonial interiors. N. Y. 1923.

THE GEORGIAN PERIOD; text edited by William Ware, N. Y., 1923 Ed. 6 v.

The monumental collection of drawings and photographs for early American architecture.

GOFORTH, W. D. AND W. J. MCAULEY. Philadelphia architecture. N. Y., 1890.

HOWE, LOIS AND C. FULLER. Details from old New England houses. N. Y., 1913. \$12.50.

ISHAM, N. M., AND A. F. BROWN. Early Connecticut houses, an historical and architectural study. Providence, 1900.

——— Early Rhode Island Houses, an historical and architectural study. Providence, 1895.

JACKSON, JOSEPH. American colonial architecture. Philadelphia, 1924.

KELLY, J. FREDERICK. Early Connecticut architecture. N. Y. 1924.

Measured drawings with full size details of moulded sections.

——— Early domestic architecture of Connecticut. New Haven, 1924.

KINGMAN, RALPH C., New England Georgian architecture. N. Y. 1913. A portfolio of measured drawings.

KIMBALL, FISKE. Domestic architecture of the American colonies and of the early republic. N. Y., 1922.

The first scholarly appraisal of our early architecture.

MILLAR, DONALD. Measured drawings of some colonial and Georgian houses. N. Y., 1916. 2 v.

NEWCOMB, REXFORD. The Franciscan mission architecture of Alta California. N. Y., 1916.

ROBINSON, ALBERT G. Old New England houses. N. Y., 1920.

SIMS, J. P. AND C. WILLING. Old Philadelphia colonial details. N. Y., 1914.

SODERHOLTZ, E. E. Colonial architecture and furniture. Boston, 1895.

SMITH, A. R. H. AND D. E. H. SMITH. The dwelling houses of Charleston, South Carolina. Photos and drawings by Albert Simons. Philadelphia, 1917.

WALLIS, FRANK E. Old colonial architecture and furniture. Boston, 1887.

WISE, HERBERT AND H. F. BEIDLEMAN. Colonial architecture for those about to build. Philadelphia, 1913.

BOOKS OF GENERAL INTEREST

ADAMS, HENRY. Mont-Saint-Michel and Chartres. Boston and N. Y. 1913.

——— The education of Henry Adams an autobiography. Boston and N. Y. 1918.

BUTLER, SAMUEL. Erewhon; or over the range. N. Y., 1910.

ANSTRUTHER-THOMAS, C. Art and man; essays and fragments. Introduction by Vernon Lee. London, 1924.

ARNOLD, MATTHEW. Culture and anarchy. N. Y., 1883.

ASHBEE, C. R. Where the great city stands; a study in the new civics. London, 1917.

"Such things as dirt, noise, the squalor of education, the need for open spaces and the ideal of the garden city affects him so passionately that his prose almost stutters"—Williams-Ellis.

BABBITT, IRVING. The new Laokoon; an essay on the confusion of the arts. Boston and N. Y., 1910.

BELL, CLIVE. Art. N. Y., 1913.

BLOMFELD, SIR REGINALD T. The mistress art. London, 1918.

BROCK, A. CLUTTON, PERCY DEARMER, J. MIDDLETON MURRAY and others. The necessity of art. London, 1924.

CHESTERTON, GILBERT K. What's wrong with the world. Leipzig, 1910.

——— The Napoleon of Notting Hill. London, 1904.

CRAM, RALPH ADAMS. The Nemesis of mediocrity. Boston, 1917.

——— Walled towns. Boston, 1919.

CROCE, BENEDETTO. The nature of architecture. Society of Architects Journal. London, 1923. v. 16, p. 273-278.

FAGUET, EMILE. The cult of incompetence. N. Y., 1914.

A cure for intellectual inefficiency.

FRANCE, ANATOLE. Penguin Island. Paris, 1908.

——— The Latin genius. London, 1924.

FRY, ROGER. Vision and design. N. Y., 1924.

HEWLETT, MAURICE HENRY. Earthwork out of Tuscany; being impressions . . . N. Y., 1908.

——— Little novels of Italy. N. Y., 1910.

HOLBORN, J. B. S. An introduction to the architecture of European religions. Edinburgh, 1909.

LEE, VERNON, pseud. of Violet Paget, and C. Anstruther-Thomson. Beauty

and ugliness and other studies in psychological aesthetics. London, 1912.

LEE, VERNON. The beautiful; an introduction to psychological aesthetics. Cambridge, 1913.

LETHABY, W. R. Form in civilization. London, 1922.

MORRIS, WILLIAM. The dream of John Ball. London, 1886.

MUMFORD, LEWIS. Sticks and stones: N. Y., 1924.

PARTRIDGE, WILLIAM O. Art for America. Boston, 1894.

PATER, WALTER H. The renaissance; studies in art and poetry. London, 1910.

PENTY, ARTHUR J. A guildman's interpretation of history. London, 1920.

——— Old worlds for new. London, 1917.

A study of the post-industrial state.

PHILLIPPS, LISLE MARCH. Art and environment. N. Y., 1914.

——— Form and colour. N. Y., 1915.

PORTER, A. KINGSLEY. Beyond architecture. Boston, 1918.

ROBINSON, JAMES HARVEY. The mind in the making; the relation of intelligence to social reform. N. Y. and London, 1921.

SCOTT, GEOFFREY. The architecture of humanism. London, 1914.

A summary of architectural theory but particularly a defense of classical and of the Baroque style.

SANTAYANA, GEORGE. The life of reason. N. Y., 1905-06. 5 v.

STURT, GEORGE, PSEUD., GEORGE BOURNE. The ascending effort. London, 1910.

TAYLOR, HENRY OSBORN. The classical heritage of the middle ages. N. Y., 1901.

——— The mediaeval mind. London, 1911. 2 v.

A history of the development of thought and emotions in the middle ages.

TAYLOR, RACHEL ANNAND. Aspects of the Italian renaissance. With a preface by Gilbert Murray. London, 1923.

THORNDYKE, LYNN. The history of medieval Europe. Boston, 1917.

WALSH, JAMES J. The thirteenth, greatest of centuries. N. Y., 1924.

WILLIAMS-ELLIS, C. AND A. The

pleasures of architecture. London, 1924.

(EDITOR'S NOTE)—The foregoing concludes the list of books on Architecture which first appeared in our issue of August, 1924.

This list, compiled with the advice of prominent architects of the United States and England, is not intended as a complete bibliography of the subject but rather as a classification of works likely to prove helpful to the practicing architect and the draftsman.

A summary of the various parts of the series is as follows: Parts I, II and III, appearing respectively in August, September and October, 1924, contain the views of various well-known American architects on the selection of the most helpful books on architecture.

Part IV, December, 1924, gives the views of writers and well-known archi-

tecs of England on the same subject.

Part V, January, 1925, a list of selected works under the heads: Bibliography; Dictionaries and Histories; Aesthetics and Theory of Architecture; Manuals for Draftsmen and Students of Architecture; Preclassical Antiquity; Classical Antiquity.

Part VI, February, 1925, a list of selected works under the heads: Byzantine and Early Christian Architecture; Italy; France; Spain.

Part VII, March, 1925, a list of selected works under the heads: England, Scotland, Ireland; Germany, Netherlands, Scandinavia; The Crafts, Furniture, Sculpture, Painting.

Part VIII, April, 1925, a list of works under the heads: Ornament; Landscape Architecture, City Planning; Books on the Architecture of Colonial America and of the Early Republic.



BURTON-ON-THE-WATER, GLOUCESTERSHIRE, ENGLAND

P O R T F O L I O

C V R R E N T · A R C H I T E C T V R E



End of Auditorium, Showing Allegorical Panels
THE HIGH SCHOOL AT BROOKLINE, MASS.
Kilham, Hopkins & Greeley, Architects



End of Auditorium

THE HIGH SCHOOL AT BROOKLINE, MASS.
Kilham, Hopkins & Greeley, Architects



Administration Wing

THE HIGH SCHOOL AT BROOKLINE, MASS.
Kilham, Hopkins & Greeley, Architects



CORAL GABLES INN, CORAL GABLES, MIAMI, FLORIDA
M. L. Hampton, Architect



Patio

CORAL GABLES INN, CORAL GABLES, MIAMI, FLORIDA
M. L. Hampton, Architect



Entrance to Patio
CORAL GABLES INN, CORAL GABLES, MIAMI, FLORIDA
M. L. Hampton, Architect



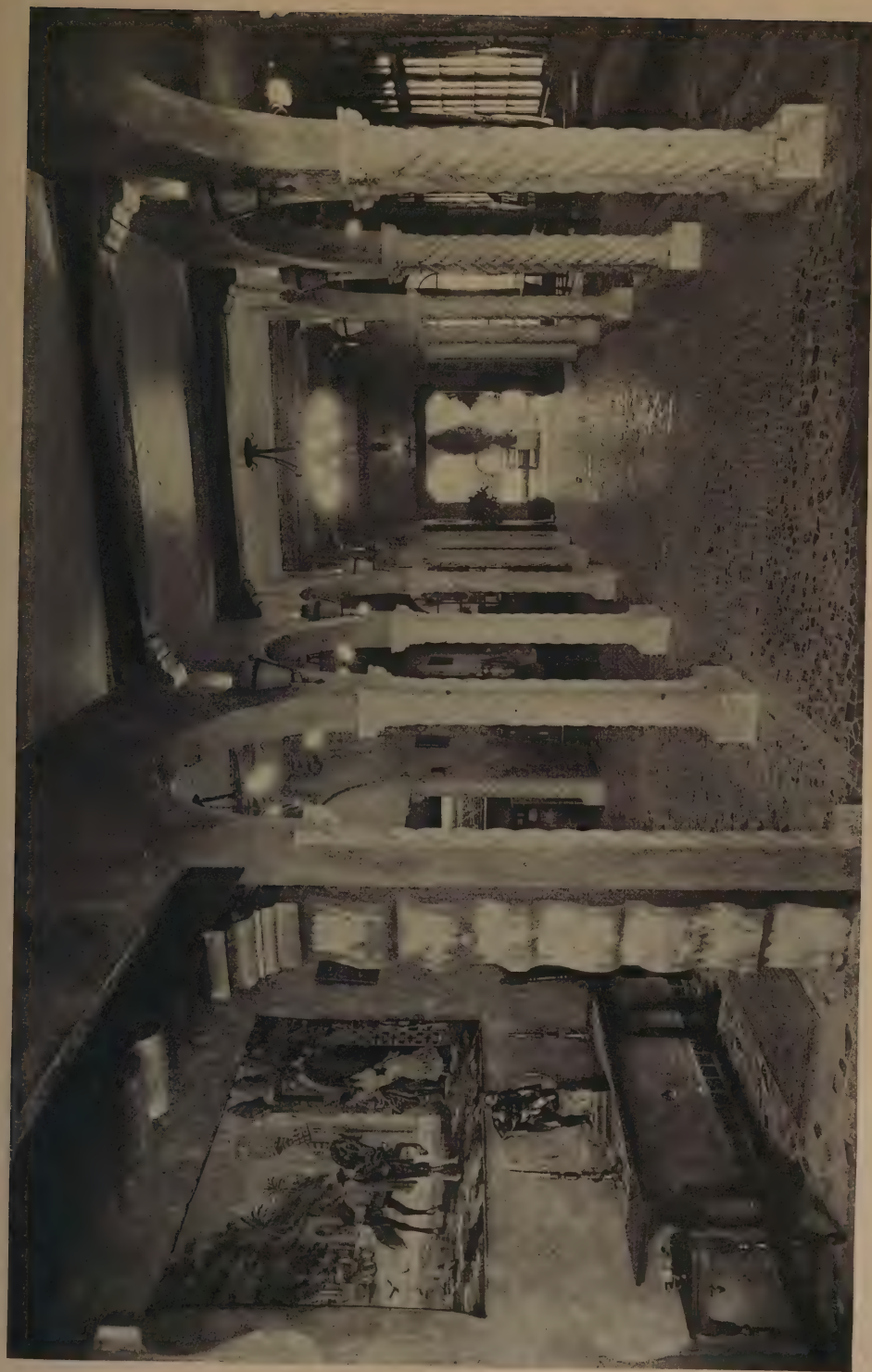
Corner of Patio
CORAL GABLES INN, CORAL GABLES, MIAMI, FLORIDA
M. L. Hampton, Architect



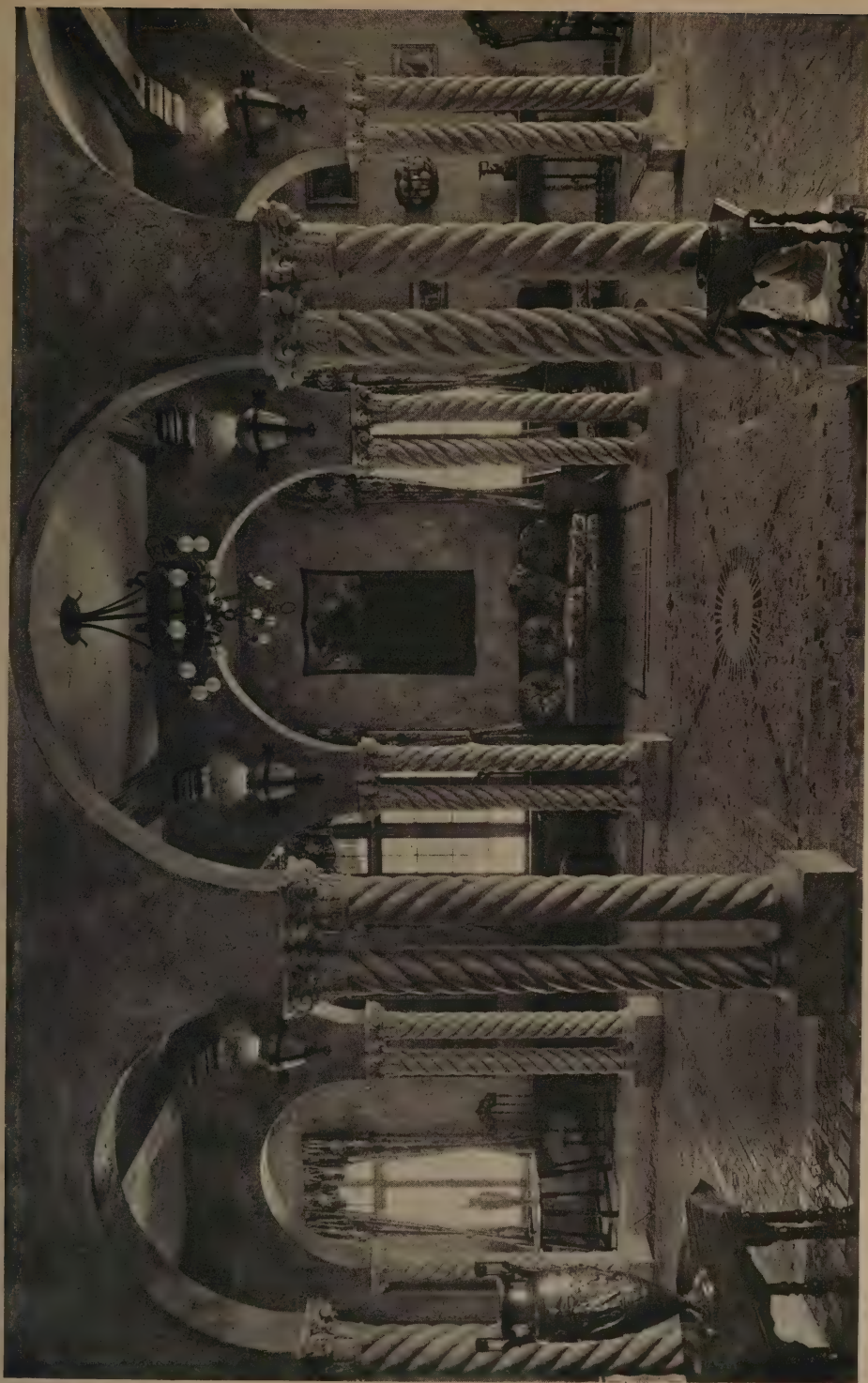
Fountain in Patio
CORAL GABLES INN, CORAL GABLES, MIAMI, FLORIDA
M. L. Hampton, Architect



Entrance to Reception Room of Executive Office
CORAL GABLES, MIAMI, FLORIDA
H. George Fink, Architect



Reception Room, Executive Office
CORAL GABLES, MIAMI, FLORIDA
H. George Fink, Architect



Detail, Reception Room of Executive Office
CORAL GABLES, MIAMI, FLORIDA
H. George Fink, Architect



REDEEMER EVANGELICAL LUTHERAN CHURCH, NEWARK, N. J.
William S. Gregory, New York, Architect

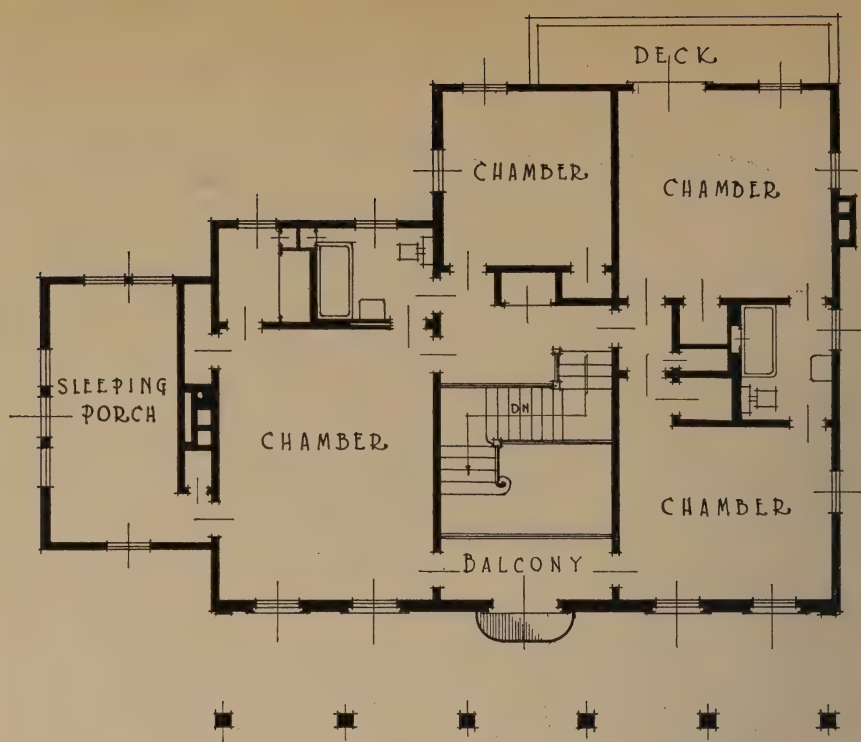


Interior

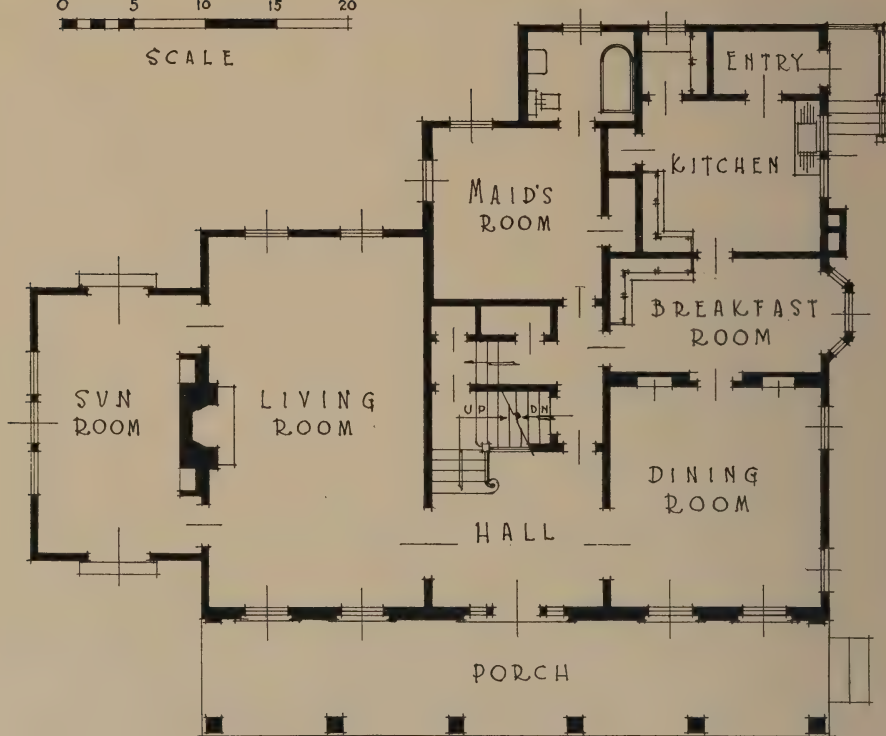
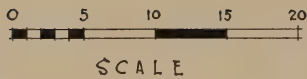
REDEEMER EVANGELICAL LUTHERAN CHURCH, NEWARK, N. J.
William S. Gregory, New York, Architect



RESIDENCE OF DR. ELMER TWYMAN, KANSAS CITY, MO.
Clarence E. Shepard, Architect



SECOND FLOOR PLAN



FIRST FLOOR PLAN

RESIDENCE OF DR. ELMER TWYMAN, KANSAS CITY, MO.
Clarence E. Shepard, Architect



Stair Hall Detail

RESIDENCE OF DR. ELMER TWYMAN, KANSAS CITY, MO.
Clarence E. Shepard, Architect



Fountain "The Vine"
GARDEN OF MRS. VALERIA LANGELOTTI, RIVERSIDE, CONN.
Noel Chamberlin, Landscape Architect
Harriet W. Frishmuth, Sculptor

~ SYNTHETIC HARMONY ~

A STUDY IN CONCRETE BEAUTY

By
Gerald Lynton Kaufman, AIA

THE ANCIENT Roman adage, "Art is long and Beauty is only skin deep," has at last fallen before the onslaught of modern science. Art may nowadays be reduced to a few simple formulas and may be used quite beneficially by all sorts and conditions of men, if taken with the proper proportions of mathematics. Beauty is no longer an amorphous, volatile, and inconstant abstraction; it is a fixed and definite science based upon all laws of the laboratory except those of physiology and biology, and it has become, thanks to the researches of modern mathematicians, so simple and easy that even a child can operate it.

Aesthetic appreciation no longer bears a relation in the individual to pocket-book, nationality, philosophy, religion, or sobriety; the standards of beauty are the same for banker, Babylonian, Bolshevik, bishop, and bartender. No longer may one say "I don't know much about Art, but I know what I like"; this illuminating and abstruse declaration is obsolete. One can either *do* Art or one can't; one has taken it or one hasn't. That is all there is to it.

To those who have never heard of Synthetic Harmony the above statements may seem rather revolutionary. They are; but so is Synthetic Harmony. This is said literally as well as figuratively; for Synthetic Harmony is entirely based upon the revolution of the simpler forms of super-space and the projection of their intersections with our own (three-dimensional) space, upon the astral plane of our consciousness. The few experiments and diagrams outlined in this brief dissertation may not give the entire theory, but will serve at least to indicate the general method of Synthetic Harmony and will show the patient reader a few of the simpler rules and formulas for determining

what is *not* Art; from this step it will be comparatively easy for him to follow the constructive side, or how to do Art, by himself. (Note: Copies of my book, "Synthetic Art and How to Do It," are on sale at all the news-stands, price \$6.98 per copy.)

Unfortunately limitations of space prevent the telling of the history of the discovery of the Obloid. We must content ourselves with the methods of determining one and of constructing graphic representations of it in its various phases of intersection. Figure 1 shows the simplest

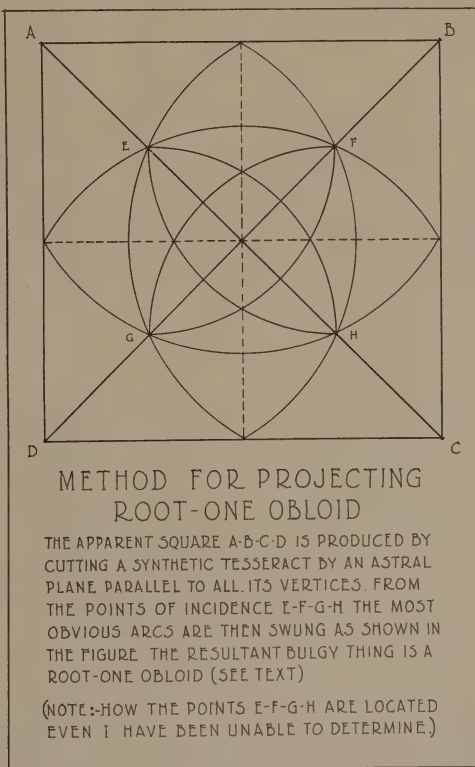


Fig. 1. The Simplest Obloid—the Root-One

Obloid, the Root-one. The text in the cut is so clear that further elucidation is unnecessary. It might be added, however, relative to the points E-F-G-H, that since October, 1924, Prof. Isaac McCarthy of the University of Leningrad has succeeded in projecting all but one of them, with a degree of accuracy positively astounding.

The Root-two Obloid is more difficult to construct, being incapable of conception by the lay mind except in motion; i.e., during the process of generation, when it is shy and hard to catch upon paper. The easiest method, therefore, has been found to be to wait until it has entirely revolved. It may then be shown as in Figure 2, which represents the same super-spacial volume of revolution as in Figure 1, projected in *time* with the unit one (1) as a basis. It is upon this figure that most of the pre-Raphaelite Persian miniatures are based; strangely enough,

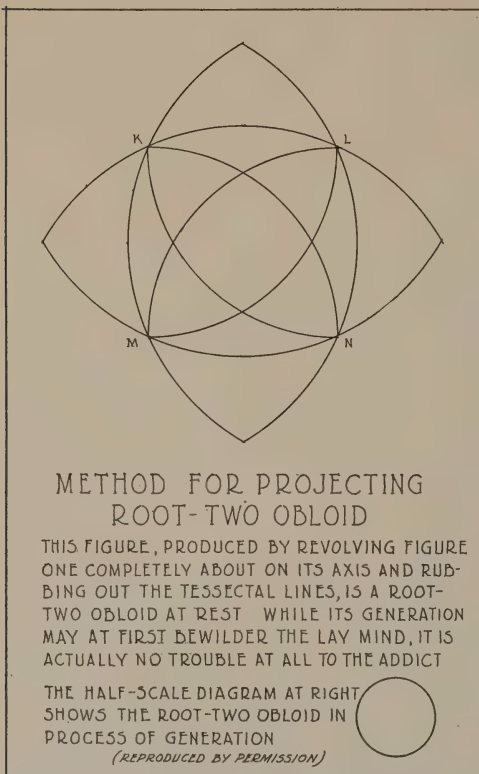


Fig. 2. The Root-Two Obloid in a Condition of Rest at the End of Its Revolution

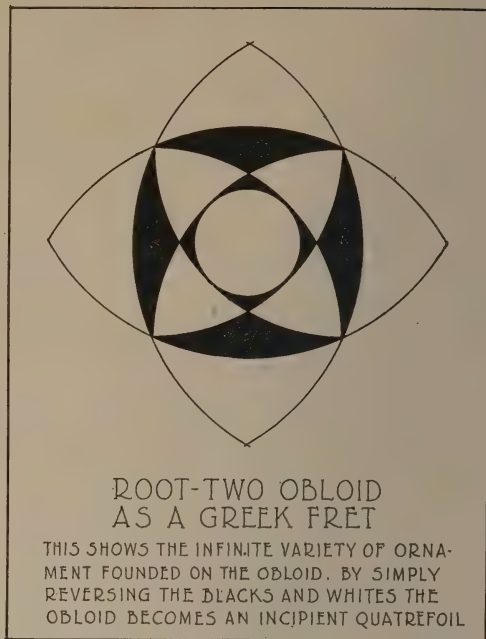


Fig. 3. The Root-Two Obloid as a Basic Source of Ornament

it is upon this figure also, but taken in the opposite sense, that most of the post-Raphaelite Persian miniatures are based.

The Root-three Obloid—(Figure 4)—is technically known as a void of revolution. That is, it is produced by taking the space occupied by a Root-two Obloid and rotating it in a direction perpendicular to each of its sides. It was sub-consciously in the minds of the Nubian Greeks when they laid off their intercolumniations; this has been proven in the treatise of Mr. Tertium Pliny of Seattle, who has prepared a series of measured drawings of Nubian temples showing only the voids, the openings, the intercolumniations, and the interstices. Oddly enough, Mr. Pliny has discovered that by constructing temples made up of these voids rather than of the material spaces between them, an architecture is evolved which bears the same relation to trans-finite beauty as the Nubian structures bear to Synthetic Harmony.

It is of the Root-four Obloid—(Figure 5)—that the most might be said; the Root-four Obloid is the *sine*

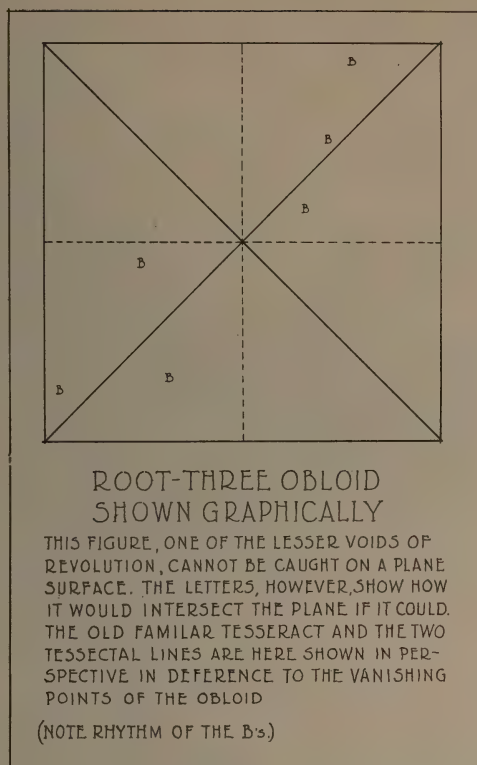


Fig. 4. The Root-Three Obloid—Technically Known as a Void of Revolution

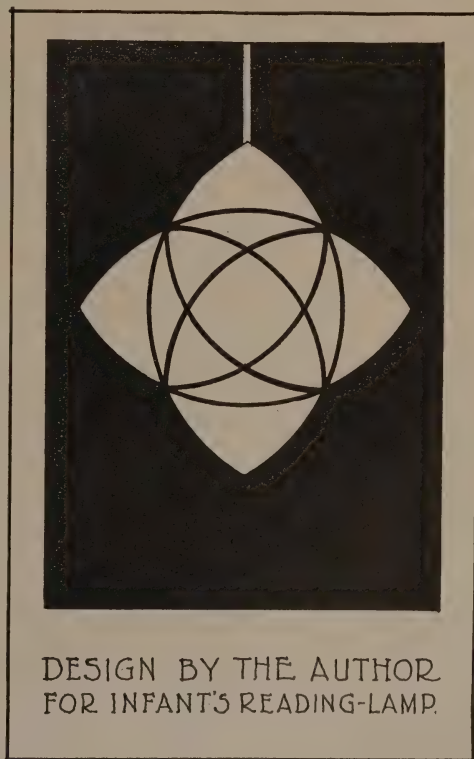
qua non of æsthetic ecstasy. It is the triumph of mathematics over the emotions; it is the *ne plus ultra* of categorical eclecticism. The Root-four Obloid is the subtle *je ne sais quoi* that links the essence of Art to the *Linga-Sharira* of *hoipolloi*. In other words, it is in the evolution of the Root-four Obloid that Science has done its damndest.

In the same page are shown Whirling Obloids, or Bicycloids; they are not, as might be concluded from a too hasty glance at the drawings, the projections of four-dimensional spheres upon a plane, but are Obloids in revolution at the speed of light, taken at a moment of ertia. The form is one recognizable throughout nature, even to the lay eye; it is upon a form similar to this that the two-dimensional figure known as the Circle is based. This shape is recurrent throughout the best known works of Botticelli and George de Forrest

Brush; it is a form used also quite frequently in Architecture, in this case being revolved upon its axis to form a three-dimensional circle, when it is cast in stone or some other pliable material and put on top of gate-posts and free-standing columns. The Whirling Obloids in the cut are actually all the same size in super-space, but appear of different sizes in the sketch because of the temporal interval between their projections, due to the time-limitation upon the manipulation of the compasses.

Figure 3 and the design for an infant's reading lamp given below show the practical application of the Root-two Obloid for the purposes of design. Needless to say, the forms that may be evolved from this figure are infinite, and each possesses its own particular Synthetic Harmony, depending only upon the point of view.

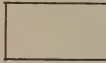
For the purpose of further elucidating the practical application of Obloid Art, I



ROOT-FOUR OBLOID NOT SHOWN AT ALL.

THE ROOT-FOUR OBLOID IS THE ULTIMATE SCIENTIFIC FORMULA FOR ABSTRACT BEAUTY. THE AUTHOR HAS A MODEL OF IT IN HIS ATELIER. SHE IS FORMED BY—(SEE DIAGRAM)

THE FIGURE IN THE SQUARE IS A ROOT-FOUR OBLOID AT AN INFINITE DISTANCE AWAY VIZ:—



THE SQUARE IS A SQUARE OF ELONGATION.

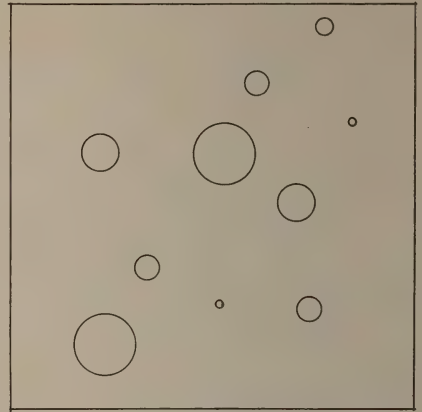
Fig. 5. The Root-Four Obloid—Defined as the Triumph of Art Over the Emotions



Fig 6. Note How the Principal Features of "Santa Lucia" Coincide (More or Less) with the Curves and Intersections of the Figure



Fig. 7. Carlo Dolci's "Santa Lucia," One of the Gems of the Author's Small But Choice Collection

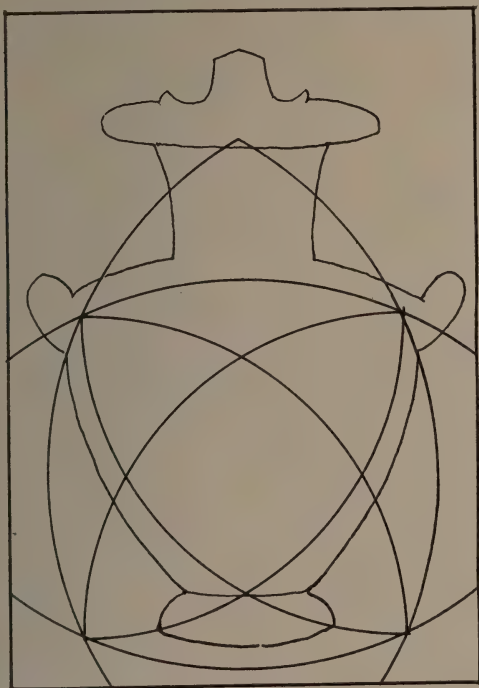


WHIRLING OBLOIDS AT A MOMENT OF ERTIA

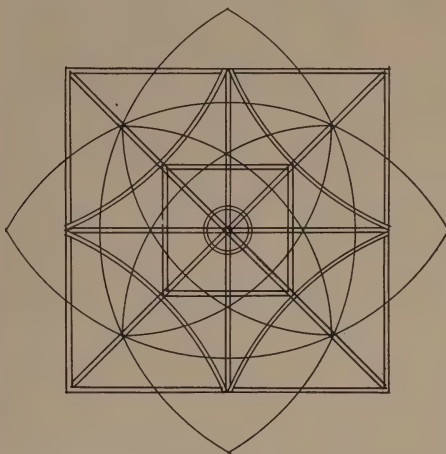
THESE ODD-SHAPED FIGURES ARE TWO-ROOT BICYCLOID OBLOIDS OF IDENTICAL SIZE AND VOLUME BUT VARIABLE IN TIME. THIS ACCOUNTS FOR THE SUBTLE DISCREPANCY IN THEIR RADII. SLIDE A PLAIN WHITE PIECE OF LETTER-SIZE PAPER OVER THE CUT AND THEY WILL DISAPPEAR ONE AFTER ANOTHER. THIS ILLUSTRATES THE IMPERMANENCE OF WHIRLING OBLOIDS BOTH TEMPORALLY AND SPACIALLY.



Figs. 8 and 9. Athenian Hydria from the Author's Collection of Aquatic Terra-Cotta. Its Salient Features Parallel or Intersect a Root-Two Obloid Almost Everywhere



ANALYSIS OF VAULTING
FROM TEMPLE OF
JUPITER PLUVIUS AT KARNAK



OBVIOUSLY AN EXPRESSION OF THE
SUB-CONSCIOUS OBLOID COMPLEX
OF PERSIAN ARCHITECTS.

Fig. 10. Showing How This System of Vaulting Is Based in Practically No Particular Whatsoever Upon the Obloid

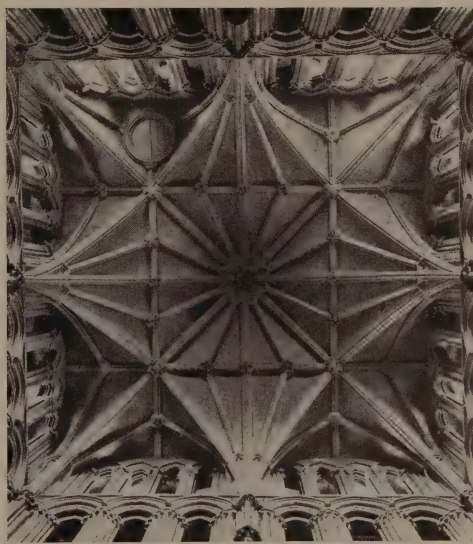


Fig. 11. Photograph of the Vaulting from the Temple of Jupiter Pluvius at Karnak, Made under the Auspices of M. Puvis de Montparnasse

have chosen at random from my two-room, bath, and kitchenette, a few designs, pictures, and *objets d'art*, and have indicated the principle of Synthetic Harmony inherent in each one. The Athenian Hydria (vase, or mug, Figures 8 and 9), on the washstand in my wife's room is one of the finest forms of aquatic terra-cotta in my collection; the small diagram beside the photograph shows how the salient features of its design either parallel or intersect a Root-two Obloid nearly everywhere.

In the case of the reproduction of Carlo Dolci's "Santa Lucia,"—(Figures 6 and 7)—which hangs over my *garde-robe-en-bois-sculpté*, it will readily be seen how the slant of the head, the location of the principal features, and even the finer *nuances* of expression, fit into the curves and intersections of the Root-two projection, or just a little outside them. The expressive nose, one notes, occupies almost the exact centre of the central Thoid—or is not so very far from it.

The photograph of the vaulting from the Temple of Jupiter Pluvius at Karnak is one of my most cherished possessions.

It was made under the auspices of M. Puvis de Montparnasse at the time he collaborated on the measured drawings of this masterpiece of archeology. The diagram in the figure shows graphically how this system of vaulting is based in practically no particular whatsoever upon the Obloid; a fact not nearly so astounding as would first appear to the reader. For it is because of this very fact that the builders of the Temple abandoned vault-construction in their earlier and later works, so that today scarcely any examples of this system are to be found by archeologists along the banks of the Nile.

Last of all, now that the reader has familiarized himself with the simpler principles of Synthetic Harmony, I am showing a portion of the mosaic from our bathroom floor, that he may apply for himself the Obloid Test thereon,—as I have done many a time without a slip.

While it is not suggested that every creation of beauty is based directly upon Obloid forms, the author feels that nearly every great work of art is based upon *something*, and that the Obloid will do as well as anything else.



Fig. 12. Portion of Mosaic, to Which the Reader May Himself Apply the Obloid Test

AN ENGLISH HOUSE and GARDEN

*"Hazelwood," the Estate of W. J. Sharp, Esq.
at Silverdale, Lancashire*



By

Thomas H. Mawson, F.L.S.



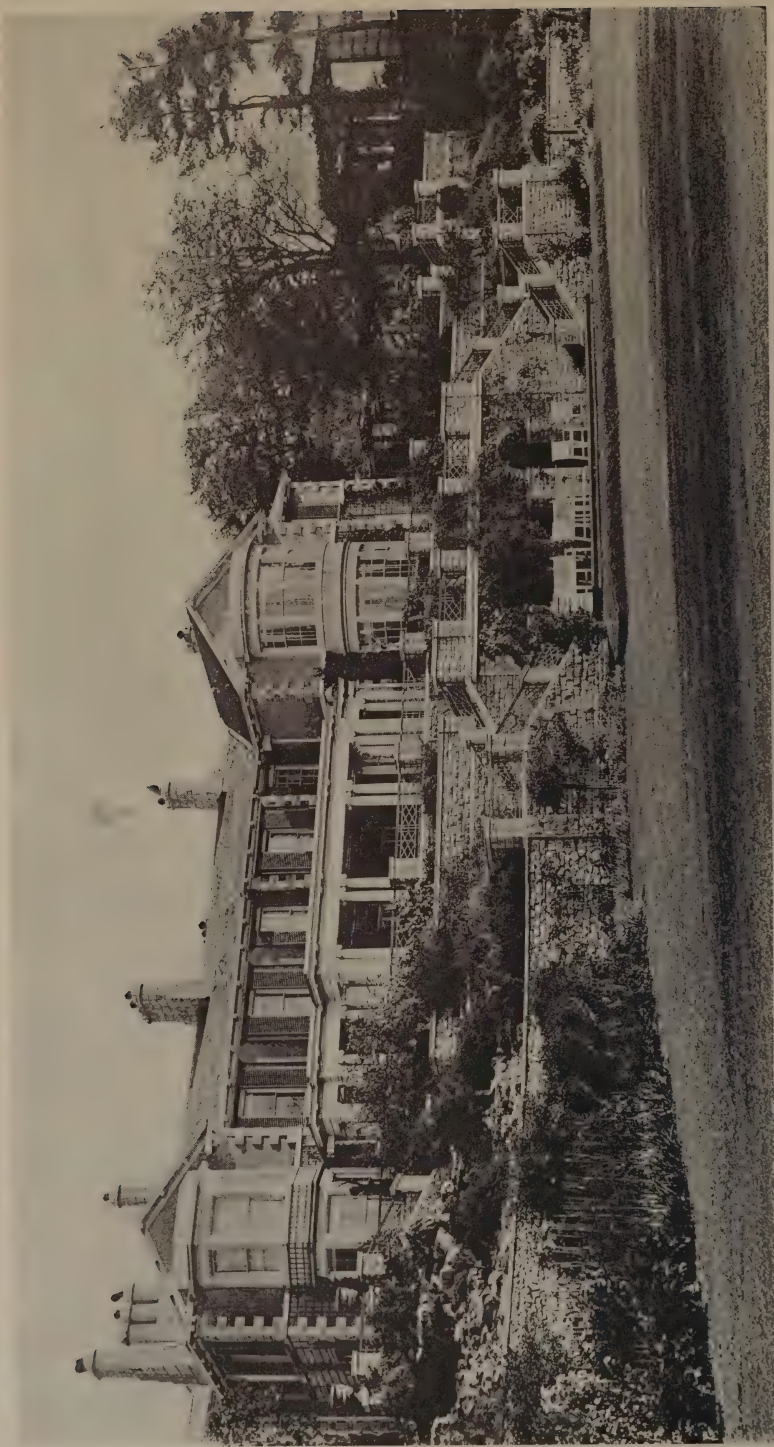
SILVERDALE is a village on the eastern shore of Morecambe Bay, tucked away in a sheltered rocky nook on "that glorious plain that the sea has left," as Wordsworth described it. Its location is picturesque, nestling amid abundant limestone rock outcropping everywhere on hills and escarpments which butt sharp and abruptly on to the vast reaches of sand or of sea, as the case may be; for the tide sweeps the Bay twice a day and then leaves it as a stretch of yellow sand, its marvelous perspective overtopped by the mountains of the English Lake District. The characteristics of this stretch of scenery are to be gathered from any water color drawings made of it by J. M. W. Turner, P. de Wint, David Cox, and others of the same school. The soft color cadences and the subtle tone gradations to be seen on the wet sands, the endless play of light and shade and the majestic cloud effects reflected in the pools and runnels in the sand, lend themselves particularly to water color and are not nearly so effective in oils.

In the days of Wordsworth, (a contemporary of these artists,) the sands formed the high road to Ulverston and the Furness villages and towns. The custom was for the public to assemble at the Lancaster end of the sands at Hest Bank, and proceed in droves under the direction of an official guide. Sometimes their numbers amounted to a hundred or more, with coaches, carts, cows, pigs, sheep &c., making a picturesque assembly which the artists eagerly seized upon to give foreground interest. A similar cavalcade came back from Ulverston and Cartmel, the return journey being accomplished between tides. There were (and are) dangerous fogs and dreaded quicksands to be negotiated, which on more

than one occasion, owing to their shifting character, led to disaster. A glance at the map of Lancashire, running the eye around from Morecambe on the east to Barrow on the west, will show the extent of this sandy area and the sweep of the tide, but nothing save the actual sight of it can give any idea of its varied beauty. To the thousands of Americans who have visited Furness Abbey, and Cartmel Priory, and who have made a pilgrimage to George Fox's residence and Meeting House at Swarthmore, description is needless.

The Silverdale vein of limestone reaches its highest point at Warton Cragg, some four miles distant. This takes its name from the village of Warton, lying at the foot of its eastern shoulder. In the immediate vicinity of this village is the ancient home and heritage of the Washington family, from which the first President of the United States traced his descent. The Washington coat of arms is carved on the exterior stonework of Warton Church.

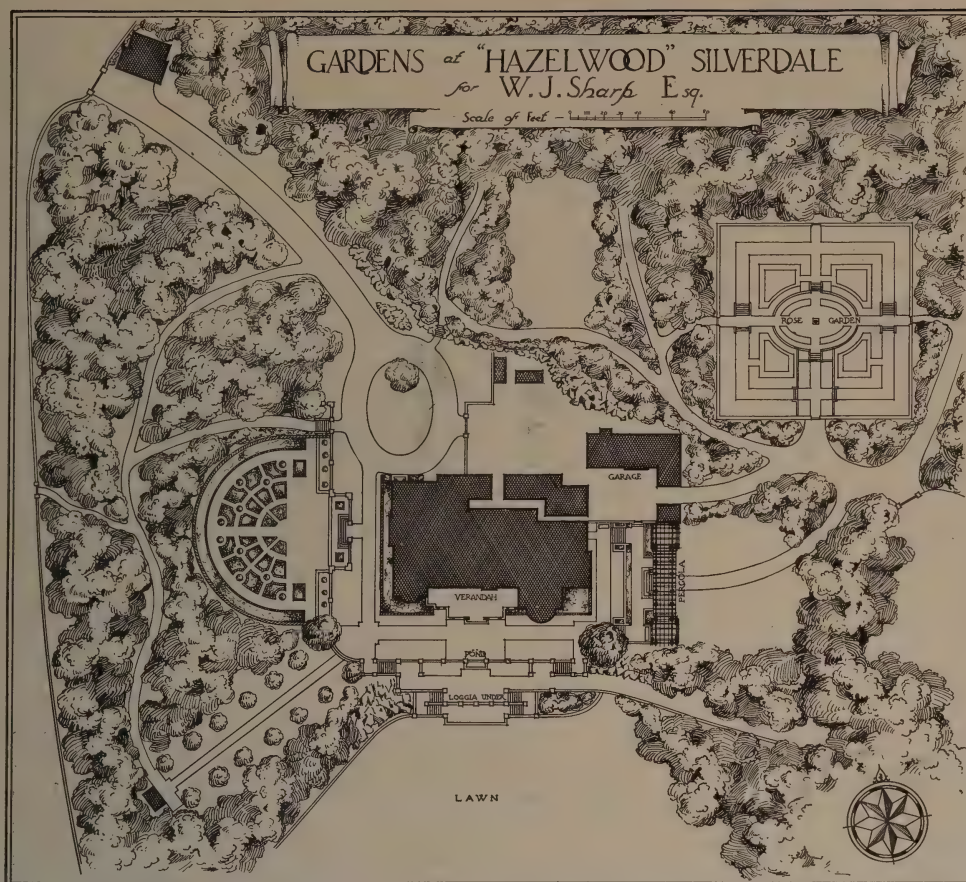
The village of Silverdale is composed of a number of scattered cottages and farm-houses and tourists' haunts, most of which are simple and becoming in character, built of the local limestone, slated with Lakeland green or grey slates, and limewashed; they are homelike in character, and the village fits into its location harmoniously. Many of the cottages have the round barreled chimney springing from the massive square base, which Wordsworth loved so well, and other characteristic features known as the North Lancashire style. These features figure largely in that now rare and expensive "John O'Gaunt's Sketch Book," which was compiled from drawings made by the staff and pupils of a noted firm



The Architectural Record

"HAZELWOOD," THE RESIDENCE OF W. J. SHARP, ESQ., AT SILVERDALE, LANCASHIRE, ENGLAND
Remodeled by E. Prentice Mawson, Architect

April, 1925



of ecclesiastical architects in Lancaster.

The squire or principal landowner of Silverdale is Mr. W. J. Sharp, whose residence, known as "Hazelwood," occupies, along with its gardens, policies, and forest land, a site of several hundred acres, elevated above and on the south side of the village. Unfortunately the house—of much later date than the village—was both incommodious and lacking in architectural character and interest, and but for certain sentimental reasons would have been pulled down and rebuilt. The site of the original house was faultless, without doubt the best location on the estate, and the aspect was perfect, being nearly due south.

Some ten years ago my son, E. Prentice Mawson, was commissioned to remodel and extend both the house, terraces

and the garden. The first thing was to give the whole some pronounced style which would impart a distinctive architectural character and accord with the local conditions of the district. For this a free rendering of the Georgian convention was chosen—to which the local stone was favorable. How far this choice was warranted is shown by the view which gives the perspective range of house front, loggia, pergola and terraces with their background and garden setting. The view shews its excellent poise on the plateau of the rocky hill, with a suggestion of the dense foliage behind. Another illustration shews the new entrance and carriage court embracing a view beyond the terraces on the north and west sides of the house.

A problem of even greater difficulty



Loggia on Bottom Terrace



The Architectural Record

Carriage Sweep and East Side of House

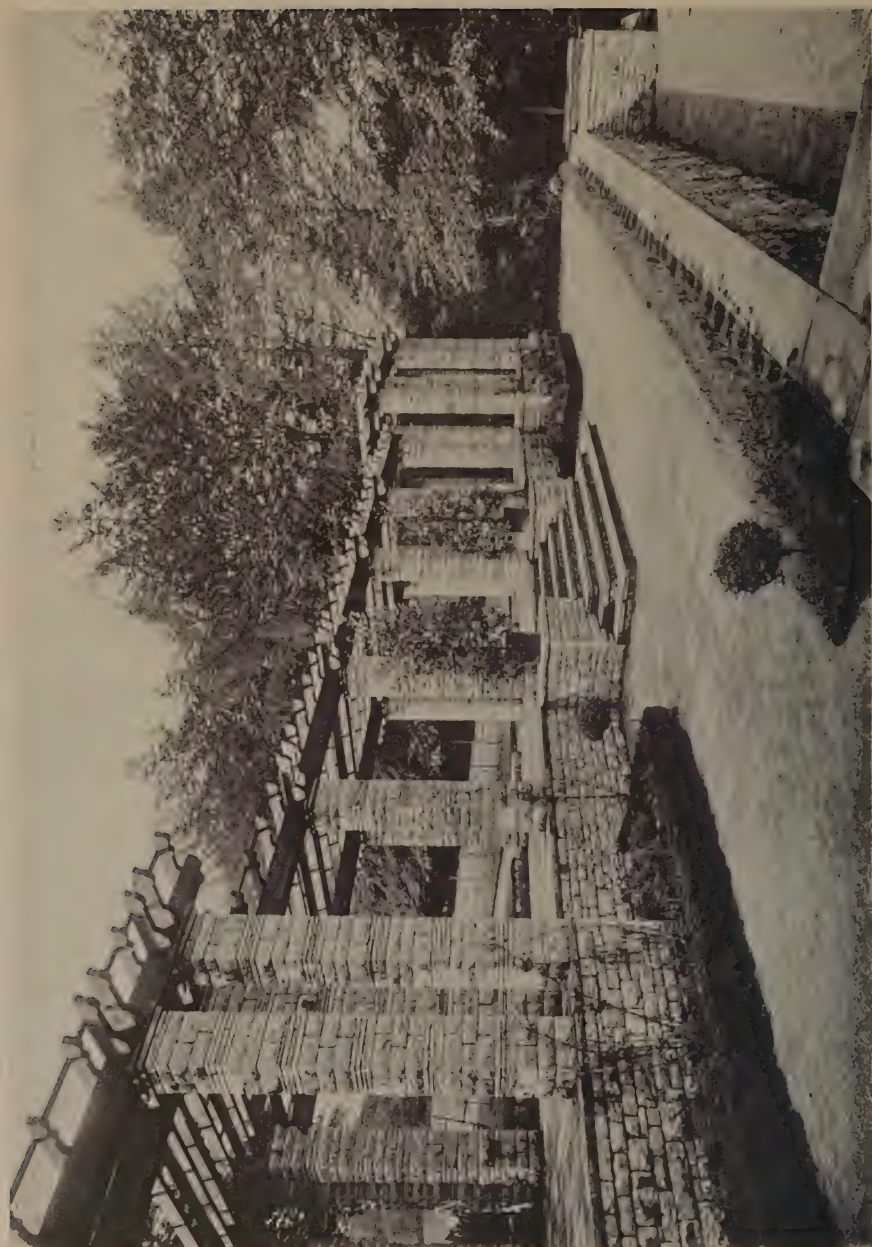
April, 1925

"HAZELWOOD," THE RESIDENCE OF W. J. SHARP, ESQ., AT SILVERDALE
LANCASHIRE, ENGLAND



Garden on East Side





The Architectural Record

The Pergola at South-West End
 "HAZELWOOD," THE RESIDENCE OF W. J. SHARP, ESQ., AT SILVERDALE, LANCASHIRE, ENGLAND

April, 1925

7



Inside of Verandah
 "HAZELWOOD," THE RESIDENCE OF W. J. SHARP, ESQ., AT SILVERDALE
 LANCASHIRE, ENGLAND

was to impart to the interior a dignity to accord with the new exterior, and the status of the owner. The latter had a remarkable collection of Chippendale furniture, which, in the days of the early glory of the Gillows, was a product of Lancaster. The ornamentation extends little beyond low plaster relief decoration, the aim being to maintain the sense of breadth and simplicity. The hall is oak paneled.

One of the illustrations shews a view of the new verandah which maintains something of the flavor of both the new interior and exterior design, while another shews the upper part of the exterior of this verandah taken from the first terrace level, in which is formed a small wall fountain and pond.

Here it may be interesting to note the

stonework of the arches of this fountain and also the loggia below. They are built of thin layers of limestone quarried on the spot. The loggia room makes a cool retreat during the hot "dog days." In winter it makes a storage place for the garden seats and chairs. To the south of the house is a pergola where the ground rises to the level of the Rose Garden.

The private grounds or gardens proper comprise many acres of typical limestone-country interspersed with delightful secluded walks wherein abound and flourish trees and conifers of all descriptions, the limestone being particularly favorable to the beech and hazel. The silvery hue and tone of the clean beech trunks accord perfectly with the stone, and take on a polished sheen upwards, which is carried throughout the



Interior of Dining Room
 "HAZELWOOD," THE RESIDENCE OF W. J. SHARP, ESQ., AT SILVERDALE
 LANCASHIRE, ENGLAND

branches. Doubtless it is from the prevalence of the hazel in the woods, that the mansion takes its name, or possibly the woods were so named by the villagers when they had the free range over them to gather the nuts. The delightful outcrops of rock may be judged from some of the illustrations, one of which shows the lichen-covered boulders lying about in pleasing abandon, plentifully interspersed with hart's-tongue and numberless other hardy ferns which delight in the limestone formation

It used to be a fashion in the Lake District to cope the boundary or garden walls abutting the road with the most curious and quaint blocks of limestone procurable. The more they resembled stalactites, petrified tree boughs and stumps, or elongated animals, the more prizable they were. For this purpose thousands of tons were carted from Silverdale and the adjacent district, oftentimes a score of miles inland, and survivals of this depraved taste may still be seen, but for the most part they have been broken





Corner of Garden Showing Limestone Boulders
"HAZELWOOD," THE RESIDENCE OF W. J. SHARP, ESQ., AT SILVERDALE
LANCASHIRE, ENGLAND

up for road material, and another fashion is taking its place. Nowadays water washed, moss grown limestone is being advertised and trafficked to make limestone rock gardens—largely replicas of the prize design at a popular annual National Show—and this may be seen in places where there is not a trace of its kindred rock within a radius of many miles. This when all around there

is a plentiful supply of natural boulders of native slate or other rock to be had already adorned with moss and lichen!

The manner in which the various portions immediately surrounding the house are woven together, are shewn on the plan on page 361. However, some of the picturesque woodland walks more remote from the house and the freer portions of the grounds are not included.



S. B. P. TROWBRIDGE
(1862-1925)

S. B. P. TROWBRIDGE

(1862-1925)

AN APPRECIATION FROM PRESIDENT WAID

To the Editor of THE ARCHITECTURAL RECORD:

Another strong man has fallen from our ranks. During the past two years, "the silent forest" seems to have been shaken more often than before, and the shocks were deeply felt as one tall pine after another came crashing to earth. But the fall has been only in the earthly sense. In each case one of the giants of the architectural profession has in reality passed on and his name and influence have been raised to greater heights.

S. B. P. Trowbridge, "Breck" as he was affectionately known, is another one of whose memory architects are proud. His name is associated with notable buildings; his material success was enviably great.

To those already prosperous the temptations to overstep the bounds of honorable practice seem even more difficult to withstand than those which come to men with hungry families. No one would dare breathe a whisper against Breck Trowbridge. During a long practice he was jealously proud of the reputation of his firm, Trowbridge & Livingston. He was loyal to the ideals of The American Institute of Architects and would unhesitatingly refuse a commission of the greatest importance if his acceptance meant injustice to his fellow architect or involved himself in any questionable way.

Due praise will be given to Trowbridge for his ability, his public spirit and his generosity. But one phrase comprehends all of these—he was an architect and a gentleman.

(Signed) D. EVERETT WAID.

TROWBRIDGE, S. BRECK PARKMAN, Architect:

b. New York, May 20, 1862; s. Gen. William P. and Lucy (Parkman) T.; B.A., Trinity, 1883, M.A., 1891; Ph.B., Columbia U. School of Architecture, 1886; Sch. of Classical Studies, Athens, Greece, and Ecole des Beaux Arts, Paris (atelier. Daumet-Girault); (degree of Sc.D., Trinity College, 1910); M. Sophia Pennington Tailer, of New York, January 26, 1896. After graduation from School of Architecture, 1886, sent out by Archaeological Institute to superintend erection of building of Amer. School of Classical Studies, Athens, Greece; then after study in Paris, returned to New York and was four years in office of George B. Post; member of the firm of Trowbridge & Livingston. Served as Member Troop A, also as 1st Lieut. 12th Inf. N. G. N. Y. Appointed by President Roosevelt Chairman National Council of Fine Arts; Incorporator, Vice-President and Trustee American Academy in Rome; Fellow, A.I.A.; Member of National Institute of Arts and Letters, National Academy of Design, Architectural League of New York (Ex. President), Soc. of Beaux Arts Architects (Ex. Pres.), Soc. of Colonial Wars, Metropolitan Museum, Museum of Natural History, American Geographical Society, American National Red Cross, Society of American Philhellenes (President) Delta Psi; Hon. Member Brit. Institute Archaeology, Chevalier Legion of Honour, France; Officer Knights of the Royal Order of the Redeemer, Greece; Grand Comdr. Knights of Royal Order of St. Sava, Serbia; Decorated Servian Red Cross; Comdr. Royal Order Crown of Roumania, 1919. Episcopalian. Clubs: Union, Knickerbocker, Metropolitan, Century, Racquet & Tennis (New York); American Yacht, Piping Rock Country. Home: 123 East 70th Street. Office: 527 Fifth Avenue, New York.

Mr. Trowbridge was associated with Mr. Livingston, as Trowbridge & Livingston, architects, for thirty years and as a member of that firm erected, among other notable buildings, the Bankers Trust Company Building, the Addition to the New York Stock Exchange and the banking house of Messrs. J. P. Morgan & Company, all on the corners of Wall, Broad and Nassau Streets, now known as the Financial Center, the Chemical National Bank, the Empire City Savings Bank, the St. Regis Hotel, the mercantile building of Messrs. B. Altman & Company, 34th Street and Fifth Avenue, and the Mellon National Bank in Pittsburgh, the Palace Hotel in San Francisco, and the Bank of America now under construction on Wall, William and Pine Streets; he also completed plans for the thirty-three story office building to be erected for the Equitable Trust Company on the site of the present Mills Building on Broad and Exchange Place; also designs for the Mitsui Bank of Tokyo, the construction of which will shortly be begun.



The Architectural Record

April, 1925

"EL DESCANSADERO"

As Seen from the Air

Nathaniel E. Slaymaker, Architect



"EL DESCANSADERO"

By
L. H. Donaldson

A "garden under lath," a new garden architectural form designed by and erected under the supervision of the former firm of Landscape Architects, Gardner & Slaymaker, now Nathaniel E. Slaymaker, San Diego, California.

SINCE CLIMATE IS ONE of the most influential factors in determining the trend of architecture, it is not surprising that California should offer one of the latest developments along architectural lines. In California, indoor and outdoor living are almost inseparably connected, and it is natural that the new architectural form should be the outcome of the mingling of the two arts, architecture and landscape architecture.

In many parts of the State small "Gardens under Lath" have been known for several years. The need to supply shade for certain tender plants like begonias and ferns led to the erection of mere coverings of lath, for all the world like chicken coops. Gradually these lath structures became larger, growing conditions within them being so phenomenally satisfactory, and some covered as much ground as a greenhouse. Even so, they remained mere squares or oblongs, the product of amateurs or building contractors of the neighborhood.

So, in the quite recent evolution of the so-called Lath House, it fell to the lot of a landscape architect to design and con-

struct what, so far as we know, is the first really architectural Lath House. It embellishes the estate of Miss Ellen B. Scripps at La Jolla by the Sea, a few miles north of San Diego, and is of interest to architects as well as landscape architects from several points of view. To the latter because, being a garden under lath, it is landscape design indoors, as it were, and to the former, because it has no prototype in design at all, is daringly original in conception, unorthodox, and incorporates several new ideas in design and structure. Though outstanding because of its artistic beauty and magnitude, its exact reproduction in other parts of the country might be inadvisable on account of different climatic conditions. Nevertheless, it is well worth studying because it illustrates the successful working out of principles that can easily be applied to other structures of similar purpose.

Two factors determining the character of the structure are present in the site, which is a long narrow triangular plot sloping down toward the sea in two directions. One of these is the horizontality of all the natural lines of the rock forma-



The Architectural Record

The Tea Room
"EL DESCANSADERO"—A "Garden Under Lath"
Nathaniel E. Slaymaker, Architect

April, 1925



The Architectural Record

Circular Pool in the Rotunda
 "EL DESCANSADERO"—A "Garden Under Lath"
 Nathaniel E. Slaymaker, Architect

April, 1925



The Architectural Record

Fountain in Hand-Made Brown Tile
 "EL DESCANSADERO"—A "Garden Under Lath"
 Nathaniel E. Slaymaker, Architect

April, 1925



The Architectural Record

Lily Pool
"EL DESCANSADERO"—A "Garden Under Lath"
Nathaniel E. Slaymaker, Architect

April, 1925



The Architectural Record

Rock Cascade Dividing Flight of Rock Steps
"EL DESCANSADERO"—A "Garden Under Lath"
Nathaniel E. Slaymaker, Architect

April, 1925



The Architectural Record

Wall Fountain in Tawny Cast Concrete
"EL DESCANSADERO"—A "Garden Under Lath"
Nathaniel E. Slaymaker, Architect

April, 1925

tions, horizon and coast lines, the other being the tawny colors of the sandstone cliffs, the beaches and distant hilly background, both of which are reflected in the architecture, style and natural coloring of the Lath House. Again, the obliquely sloping ground indicated a structure of varying levels inside, with a roof-line dropping down in steps. Thus the site seems to grow right out of the land-forms and to belong, you might say. Both in its outward line and its airy, lacey, albeit firm inner detail it presents a distinctive and arresting silhouette as seen foreshortened against the blue greens of the southern sea.

In plan, there is a rotunda with one short wing, up-grade to the right, as you enter, and a very long wing, in several levels, down-grade to the left, covering six or seven thousand square feet. The axis of the long wings is bent near its middle, to conform to the natural outside slope. The rotunda or main entrance is forty feet in diameter, sixteen-sided, the chords of the circle being of varying widths and twenty-four feet in height, over all, eight feet for the dome proper and sixteen for the body of the rotunda. The shorter wing is four-sided, three sides being about twenty-five feet long, and has a total height of about twelve feet. The longer wing is some hundred and eighty feet long, twenty-five feet wide and twelve to fifteen feet high on different levels. Flat roofs on both wings harmonize with the flat-roofed dome crowning the rotunda, the whole planned to foreshorten pleasantly against the horizontal lines of the nearby residence and the general flat contours of the coast lines.

The carefully worked out design in elevation depended for a large share of its effect upon the two chief materials used in construction, namely, natural weathered lichen-covered rock, or hard-pan, for the low supporting bases or walls upon which the entire superstructure of redwood timbers and beams with detail pattern of redwood lath was superimposed. This combination in itself was a structural novelty. It was made possible by the employment of solid concrete footings or cores varying in height for the differ-

ent levels desired. The native rock was thus applied like a veneer over this concrete core, the inside and outside treatment being the same, to all appearances laid like the dry stone walls typical of the houses of New England.

The chief structural innovation lies in the erection of the broad flat dome for the rotunda. Ordinarily risky, this type of dome was made possible by the use of iron beams which spring from above all the heavy vertical timbers of the rotunda and are caught in a "frog" at the center. Light lath webbing in concentric circles composed the only overhead covering and the iron beams were covered to the desired thickness with laminated strips of redwood. Hence the effect of a great cobweb. The main lines were clean cut, everything carrying right through. The sixteen sides of the rotunda were filled in with a definite lath design, treated like panels. The wider ones reflected the semi-circular Mission Arch often used in the old Spanish California architecture.

Throughout the other wings or gardens, piers of redwood supporting timbers were used and the spaces between filled with a uniform lath design or pattern. A Japanese "interval" or ratio of widths was used as a standard and increased, proportionately, only in the lowest garden, where a greater headroom was called for. Though not in the least French in feeling, but inclining more to the Japanese, this panel design might be designated as "treillage." Redwood cross beams spaced two feet apart spanned the whole structure except the rotunda, and on top of these beams miles and miles of lath, specially grooved to carry off water, were laid in a north and south direction. This procedure gives the most even distribution of sun and shade throughout the year.

In order that the building might be more than just a specialized conservatory, a novel feature in the shape of a tea-room was developed midway down the longer wing. Whereas dull green handmade tile covered the rotunda paths, in the tea room section a hand wrought tile in dull blue, also laid at random, was used both on the floor and as a frame for the three great plate glass landscape windows facing the

Pacific, the same body of water suggesting the blue and green of the tile. On the ocean side of this section a couple of Chinese perforated medallions were used as decorative inserts. To provide against inclement weather the tea room has a glazed roof, under which a lath pattern laid to simulate tile was hung.

To make the structure usable for entertaining at night and to get special effects of beauty, a complete system of lighting was installed, using lead conduits as protection against water underground, and iron pipes overhead concealed behind beams wherever possible. Two types of lighting were adopted, one for overhead permanent lanterns at fixed points with numerous blind sockets for Chinese lanterns on occasion, and the other a system of reflectors placed below each retaining wall at changes in floor level, so that at will the whole interior might be lighted in any way desired. All the permanent lanterns are original designs worked out in hammered copper with lights of a composite mica giving an orange glow.

Fully as much thought was given to the decorative water features as to anything else. For practical purposes a complete sprinkling system was installed, of course, but having achieved the necessary shade, it was felt that water should be everywhere both visible and audible. To this end there are in all five fountains or pools and a cascade. In the rotunda there is a circular pool of diminutive bright green tile in the center of which is a pedestal of thin granite veneered on a concrete cone. This is truncated to support a bronze fountain figure, "the Boy with the Frog," by the well known sculptor Edward Berge. The smaller garden has a wall fountain in tawny cast concrete, consisting of a pair of dolphins that empty into a fluted conchshell. At the point where the blue tile of the tea room ceases, a double set of stone steps leading down to the next garden surrounds a fountain in the Spanish manner, done in handmade brown tile, the water issuing from a conventionalized terra

cotta fish form. This pool initiates a unit water feature over sixty feet long, comprising, beside the brown tile pool, a lily pool outlined in weathered rock with a simple jet d'eau in the center, and two bronze frogs at diagonal corners for low curved streams, the water from which courses down a rock cascade dividing the next and highest flight of rock steps on through a rock tunnel to a final pool, with another jet d'eau emitted from a terra cotta sea-horse. The sea note is thus carried out in full in each fountain.

Special attention was given to the rhythm, not only of line but of color and texture. Redwood, which will gradually weather to deep brown tones, weathered lichen-covered rock in tawny tones, hammered copper hardware, paths of deep ochre disintegrated granite, (except where tile was used) numerous redwood benches throughout, tea room furniture, —in fact everything is harmonious in color. And in texture this is also the case because in addition to the hammered copper, the uneven hand-made tile, the natural rock bordering all the walks, pools, etc., the hundreds of feet of rock veneer, inside and outside the structure, the unmilled lath, miles of it, every single beam and every strip of moulding was rough-hewn, thus tying together the texture of the whole creation. As occasion demanded, beams were six, eight or ten inches square, the cross roof beams and horizontal beams being four or six by eight or ten, as needed.

A most careful drainage plan was followed and to make assurance doubly sure by way of protection from sea breezes, the entire ocean side of the structure was glazed on the outside in such a way as to be entirely invisible from the inside. Finally, there is a general service house where one finds ample space for the potting and caring of plants, the toilets, a kitchen complete in every detail and even a pantry well stocked with Spanish peasant ware for tea-service to complete the story.



A BRICK WALL

There exists in New York City at present (February, 1925)—but not for long—a unique and most imposing architectural spectacle. This spectacle is as much a matter of accident as is the pageant which the skyline of Manhattan sometimes presents from certain points of view in the Harbor or in the Hudson River. No architect designed it with the expectation of making it impressive. It is devoid of economic value. It will certainly disappear in the near future. The rare combination of conditions which brought it into existence is not likely to be repeated even in such a fruitful breeding place for architectural "sports" as the Borough of Manhattan, in the City of New York.

The architectural spectacle to which I refer consists of two sheer, bald, uncompromising stretches of brick wall which rise on two sides of a right angle on the northeast corner of Thirty-seventh Street and Eighth Avenue. The corner itself, measuring approximately 100 by 100 feet, is for the moment cleared of all buildings. But there has just been erected on the north side of Thirty-seventh Street, one hundred feet east of Eighth Avenue, an eighteen story factory. The wall of this factory is composed of ordinary brick, unbroken by a single window or opening of any kind. It is just one vast desert, with a superficial area of almost 17,000 square feet of brick wall. On the southeast corner of Eighth Avenue and Thirty-eighth Street a twenty story factory has been built, and the south side of this factory presents to the passerby a superficial area of brick wall even more impressive than the wall which encloses the eastern line of the same corner lot. This second wall, it is true, is not completely deprived of openings. It is cut by a small well which will supply air, if not light, to the inhabitants of the lofts when the corner of Thirty-seventh Street is "improved" with a new building. But all the windows are situated in the interior of the well;

and the majesty of the brick desert itself is not offended by even one officious and trivial opening. There they stand at right angles, one to another—two lofty and dreary wildernesses of brick wall, their surface giving not the slightest indication that they serve any useful purpose to any human being.

Of course they will not serve even the purpose of an enclosure for long. These walls were born to parade their monotonous magnificence in unrelieved obscurity. If the owners of the buildings could have counted on their continued exposure to the public gaze, they would of course have ordered the walls to be pierced with many windows so as to supply the workers in the busy lofts with additional light and air. But they knew that the vacant lot on the corner would soon be occupied by a factory of the same or greater height, and that the walls which are now exposed would thereafter fade away into a partition, as invisible as an imaginary section of any brick wall cut parallel with its longest dimensions. Yet during the brief period of their utterly uneconomic exposure to the eye, they certainly present a most imposing sight—one the like of which the hands of man have not built since the pyramids.

There is nothing rarer in architecture yet more intrinsically satisfactory to the eye than a generous stretch of unpierced wall. It does not often happen that conditions permit such walls to be built. A mediaeval castle, surrounded by fortifications, forms the classic example of comparatively unbroken wall surfaces; and its utility was of short duration. As soon as it became less necessary for wealthy people to fortify their homes, holes were cut in these massive stretches of masonry, and ever since, but particularly in modern times, the demand for air and sunlight has forced on architects the necessity for piercing walls with windows. There are many Italian and Spanish villas whose occupiers wished to exclude the sun for a large part of the year and who per-

mited their architects to build them urbane yet substantial walls with comparatively few openings, but the modern house builder all over the world seeks and is quite right in seeking all the light and air which he can get. The walls in modern houses are merely the frame work for doors and windows. All the more exceptional and interesting, consequently, is the fantastic defiance of this rule which has appeared on the corner of Eighth Avenue and Thirty-seventh Street—to my mind a strangely and monotonously impressive apparition.

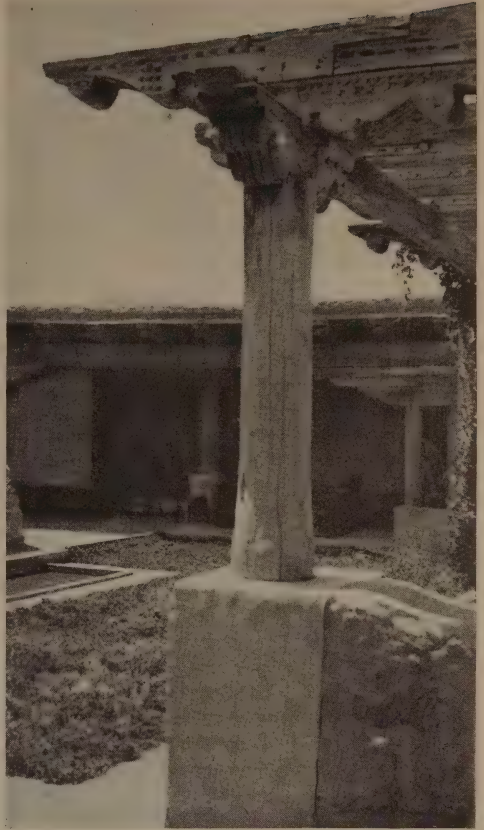
HERBERT CROLY

OLD INDIAN MISSION TIMBER USED IN MODERN HOME

From the abandoned mission church of Nambé, for two hundred years the center of religious activity and education among the Indians and Spanish colonists of New Mexico, have come the hand-carved and painted timbers used in the studio home of Gerald Cassidy, Santa Fe artist. The historic weathered wood was junked unwittingly in the town several years ago and rescued by Mr. Cassidy and his wife, who immediately set about restoring and preserving the treasure in their own home.



Interior of Studio Showing Typical Corner Fireplace of Indian Construction

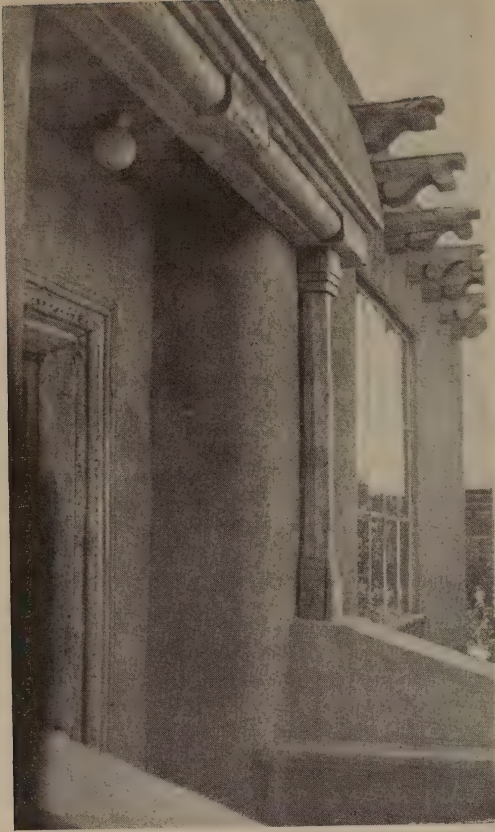


Pillar of Pergola Porch Showing Detail of Carving on the Vigas. Across the Patio Is Seen the Historical Carved Beam

The most valuable relic of the old mission, the altar paintings of La Senora de Las Rosas (Our Lady of the Roses) has been set up intact as one wall of the entrance hall of the house, seen through a carved wooden arch from the living room. The center panel on which is painted Our Lady and her symbol, carved roses, has been hinged to form a door into an adjoining room.

A great carved beam which tells of the erection of the church by Governor Don Juan Domingo de Bustamente, in 1729, has been used to support the roof of an open porch along one side of the patio in the rear of the house. In the center of the beam is a large crack where the wood gave way under the too great burden of a modern style roof with which the Indians endeavored to improve the mission a few years ago.

Other carved wooden members of the old mission, the columns with their elaborate capitals, and the projecting roof vigas, have been incorporated into the house as both outside



Studio Entrance, Showing Hand Carved Wood-work Trimming from the Fallen Indian Mission Church of Nambé

and inside trim for windows and doors. Scraps of the antique wood have been made into a cabinet in the living room for Indian curios. The quaintly cupped cavities of the decoration in the wood are faintly tinted with alternating rose and blue. The belfry of the old mission has been converted into a well tower in the garden.

MESTROVIC IN RELATION TO AMERICAN SCULPTURE

Americans are a race of builders—builders of great new cities, traditions and ideals. With this constructive instinct there is a tendency to estimate values from the basis of serviceableness. A systematic diagnosis of our ethical necessities and requirements is resulting in a clearer definition of our artistic sympathies and aspirations, and as a natural consequence the critical verdicts of Europe are accepted with greater reserve than formerly. A higher value is now attached to the inspirational ca-

capacity of a work of art by those who follow the creative arts, as their constructive tendencies call for suggestion and mental stimulation. A new artistic movement, or the work of a contemporary is intuitively judged by the portent of its educational message, or the extent to which it contributes to our aesthetic culture and breadth of vision. Mestrovic, when considered from these points of view, reveals a serious lack of adaptability to those singularly complex circumstances which are beginning to control the direction of our artistic sympathies.

He comes to us with great prestige, with fanfares of literary trumpets. The foreign critics who praise his work are of such standing that any deviation from their opinion requires courage—or temerity. In his address to the Architectural League Mestrovic spoke of Art as an international language; this is so, but it is the *significance* of the sentiment expressed which concerns us most in our endeavor to formulate a code which will govern our future aesthetic existence.

As an artist of consummate skill and a rare personality, we accord him full honor—but his inspirational capacity leaves us cold, and little desire is felt to see in him the precursor of a new movement. In conversing with sculptors on this subject, there appears little likelihood that his manner will influence their aims or views in any way. It might have been assumed that the primitive quality of Mestrovic's work would have exerted an instantaneous appeal, when we consider the enormous attraction for the earlier phases of Greek sculpture, and the present predilection for the Romanesque in architecture.

The reactions which his work stimulate are contradictory. Though his form of expression is primitive, his sentiment is essentially decadent; then, the extreme sophistication of his technique is in conflict with the manipulation of mass. These factors accentuate the divergence between his manner and the spirit of the school he emulates. In contemplating primitive sculpture, we invariably feel that technique is a natural product of substance conquered in the realization of an aesthetic concept; but in the synthetic primitive, technique is an accomplishment very deliberately directed to produce an artificial equivalent to the spontaneous. It represents the fundamental difference between the formula and the intuition. Primitive sculpture in our day is greatly dependent upon environment—a fact fully demonstrated in the design of Mestrovic's chapel, which we recently reproduced. The macabre quality of his expression is distinctly repellent to American virility. He invades our memories, but lacks those essential associations which contribute

vitality to those things which he simulates.

We have the inquisitiveness of the new race just awakening to aesthetic consciousness, which makes us susceptible to artistic diversion; but our pleasure is distinctly combative when a new interest challenges that which we hold as sane and sacred. An adolescent appetite prevents us seeking nourishment in that which we suspect of unwholesomeness. We search for that in art which will ennoble our ideals, not that which reflects the introspection of the lonely individual tortured by supersensitiveness. As a race, conscious of a tendency towards sentimentalism, we regard his work as a warning rather than a message.

A new factor which has probably been operative since the days of the Greeks, begins to exert powerful influence over artistic creation in this country; we are conjuring the image of an enlightened public, which must only be proffered the highest aspirations in normality. Though this public is yet a mythical quantity, the artist senses its capacity for sound judgment if carefully nurtured, and an educational responsibility stabilizes creative effort. The artists of Europe hold their publics in active contempt as a mass of beings beyond redemption, while we regard ours as a rising generation which must be influenced by the virile, sane and beautiful. The morbidity of Mestrovic is a barrier which turns those back who might be tempted to follow along his path.

LEON V. SOLON

FONTAINEBLEAU SCHOOL OF FINE ARTS FOR AMERICAN STUDENTS

The special three months' course in Painting and Architecture at the Fontainebleau School of Fine Arts, which achieved such success in the years 1923 and 1924, is to be offered again to American students this coming summer from June 25 to September 25.

The school, under the direct patronage of the French Government through the Minister of Fine Arts, counts among its professors some of the most distinguished French artists and architects of the day. This, added to the fact that the school is located in the Palace of Fontainebleau—an art treasure in itself—is sufficient indication of the advantages to be gained from a course of study there.

No attempt is made to duplicate the program of study outlined by any other School of Art either in the United States or in France, the purpose being to provide a sort of post-graduate course for advanced students.

For painters and sculptors, the course includes atelier work in the Palace studio, spe-

cializing in the study of the art of Mural Decoration and the study of Ornament; special work in Tempera and Fresco; trips to Paris and the surrounding country to study the work of the older and the modern masters.

For architects, it includes atelier work in the Palace drafting room; specialized study of French Architecture, past and present, and of its allied arts; study trips to places of architectural interest, covering a wide area.

In addition, lectures are to be given on the History of Painting, Sculpture and Architecture, and on the French styles. Also, classes are to be held in French and French history.

Two prizes are to be awarded this year in the Department of Architecture; one of one thousand francs, given by the Massachusetts Institute of Technology, and the other of six hundred francs, given by Mr. J. P. Alaux.

Though America possesses wonderful opportunities for technical training in the Fine Arts, a sojourn in a land which abounds with the artistic manifestation of an older civilization cannot but benefit the student who is seeking to widen his outlook and to gain inspiration. And where could he choose a better center than this fine old palace replete with furniture and mural coverings of a past decade, and set amidst surroundings of picturesque charm!

LOUISE MASON

A CORRECTION

We desire to express regret for the error which occurred in the captions under the illustrations on pages 283 and 285 of our March, 1925, issue. The captions in each case should have read: "Decorative Leaded Glass Windows Designed by Scott Williams for a Florida Residence."

INTERNATIONAL EXPOSITION OF MODERN DECORATIVE AND INDUSTRIAL ART AT PARIS, FRANCE

The International Exposition of Modern Decorative and Industrial Art to be held at Paris, France, from April to October, 1925, covers all decorative art as applied to architecture, furniture, dress and adornment, street planning, the theatre and landscape gardening.

The Committee of Admission have announced their intention to admit only those works which possess the quality of artistic originality, of perfect adaptation to modern conditions of living, and of good workmanship. The exhibits are limited to works of *new inspiration*, imitations and copies of existing work being rigorously excluded. New models of cheap as well as of expensive production will be shown since

beauty and art may be present even in the simplest and most modest object.

Arrangements are being made to carry out this Exposition on a large scale, exhibits being housed not only in the Grand Palais but structures are to be erected along the Seine Embankment from the Concorde to Alma Bridge. This Exposition should form a great source of attraction and of educational and commercial interest to visitors to Europe during the year.

EUROPEAN TOURS FOR ARCHITECTS AND STUDENTS

An attractive prospectus recently issued by the Temple Tours announces two trips to Europe under their auspices during the coming spring and summer. Although these trips are planned to be of especial interest and value to architects and architectural students, we read in the announcement that there will probably be enough non-professionals in the parties to prevent too much shop talk.

The first of these parties is scheduled to sail on the *Laconia* from New York April 25th, and will be under the leadership of Mr. W. L. Groben, Architect, of Philadelphia. The date was chosen with a view to the convenience of those architects from a distance, who might be planning to attend the coming Institute Convention in New York.

The summer tour will leave after the closing of schools and colleges, June 27th, on the *Carmania* from New York, and should attract students and teachers, as well as those

architects who are unable to leave earlier in the season. This party will be led by Mr. E. Donald Robb, of the firm of Frohman, Robb & Little, of Boston.

The two itineraries are substantially the same and are carefully planned, so as to cover not only many of the principal places of interest in England and France usually visited by architects, but, by means of automobiles, to reach points less familiar to tourists on account of their inaccessibility.

Sufficient time is to be allowed everywhere for sketching, measuring, photographing and the studying of details, and for the careful inspection of objects of interest in museums and galleries. While in Paris, an opportunity will be had to see the International Exposition of Decorative and Industrial Art, a show which will be full of inspiration. Side trips will be taken to the battlefields and to points of interest within easy reach of Paris.

After the completion of the main tour, parties will be formed for extension trips into Southern France, Spain and Italy.

For the experienced traveler as well as for the inexperienced one, these trips should be pleasant and profitable. The former will enjoy the sensation of being freed from the anxiety of looking after hotels, transportation and baggage. The latter will be shown the architectural resources of Europe by those who know them and can interpret them; and the congenial companionship, together with freedom from care, should provide a pleasant summer vacation for all.



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The
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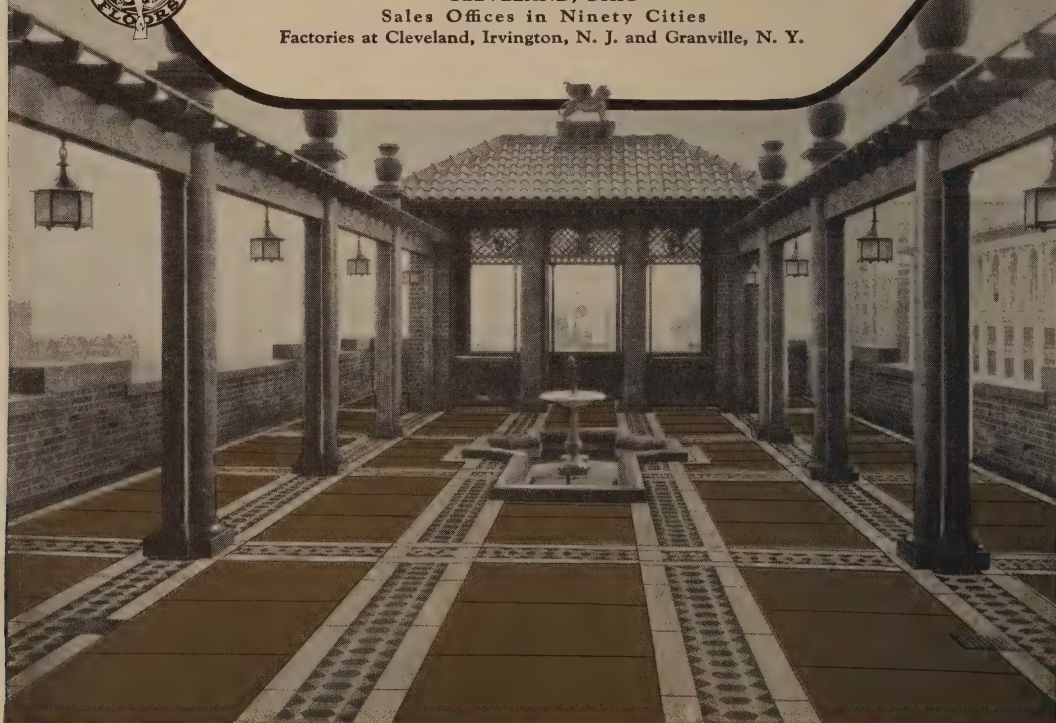
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VELVET DOSSAL
ENCRUSTED WITH GOLD AND COLOR
STUDIO OF J. M. AND A. T. HEWLETT

This process for the enrichment of textiles has been developed by the Hewlett Studios as a result of some years of experiment. The ornament is applied to the velvet or other material through a stencil screen of gauze in which the solid portions have been filled with an elastic, paper glaze. The material used for this encrustation is similar to the gesso of the early Italians. Over this gesso the gilding and colors are applied, the fabric being tightly stretched during the process. When the fabric is removed from the stretcher the movement of the material produces a minute crackle over the entire surface—which, owing to the fact that each particle of the crackled surface is tied back on the fabric by the projecting nap, cannot flake off) thereby greatly adding to the charm of the surface texture. The screens used for the great curtain of the Eastern Theatre in Rochester were eight by fourteen feet in area. The great size possible for these stencil screens makes practicable an heroic scale in the repeat of an allover ornament.



VELVET DOSSAL
J. M. AND A. T. HEWLETT

The ARCHITECTURAL RECORD

VOLUME 57

MAY, 1925

NUMBER 5

The STRAUS BUILDING, CHICAGO

Graham, Anderson, Probst & White, Architects

By
A N Rebori

FEW OF US realize that the Parthenon, the Odeum, the Propylaea of the Acropolis, the Sanctuary of the Mysteries, and many other great buildings of ancient Athens with their masterpieces of sculpture and decorative arts which have set the standard of classic perfection down to the present generation, were created and fully completed in the heyday of a single administration of forty years' duration. Down to the time of the Caesars the great work of the Periclean age had a preëminence over all Rome's attempts at splendor, both in conception and grandeur, which precludes comparison.

Once the Romans were in full sway, however, the gigantic scale of their construction enterprises surpassed in magnitude of plan and engineering skill the remotest dream of Ancient Greece. In engineering skill alone, aside from any aesthetic consideration, the noble proportions of the great Roman baths with their scientifically controlled rooms of varying temperatures, the huge aqueducts, roadways, and stadia for the multitude reach

a state of organized development comparable with the present age of activity.

The Greeks were masters of detail, while the Romans were masters of organization. Both civilizations have left an indelible mark in their work.

No doubt we excel the ancients in the speed with which we build, but we must go back to Imperial Rome with its engineering skill and organized effort to find a parallel to our own active time, when individual effort and exactness of expression must either keep abreast with the schedule of construction or fall by the wayside. Speed and organization has become a mania with us, and in the pursuit of this one aim we are often apt to forget that the lasting works of man which have lived through the ages, expressing the highest aspirations and beauty of a people, their customs and their time, are the efforts and results of the individual.

Fortunate, indeed, is the architect of ability who has time to devote to study and development of his work before actual construction is begun. For it is a



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View from Grant Park

THE STRAUS BUILDING, CHICAGO, ILL.

Graham, Anderson, Probst & White, Architects

well founded precept that deftness and speed in working do not impart to the work an abiding weight of influence nor an exactness of beauty, whereas the time that is put out to loan in laboriously creating pays a large and generous interest in the preservation of the creation.

Once actual construction is begun it is too late to meditate. Then it is a case of creating in haste or falling back for deliverance into the merciful arms of precedent—which offers the line of least resistance—and playing the game safe for all that is in it.

Our one truly American contribution to architecture is the skyscraper with its romance of steel, elevators, and great heights. Here is a modern problem offering something new far removed from the cry of Ancient Greece or Rome. Will the future generation look back with approval at our solution of this all-inspiring opportunity?

The Straus Building, Chicago, recently completed at a cost of approximately \$12,000,000, sets a high standard in building construction, adhering to an established uniformity of design and frankly acknowledging the accepted classic forms in the architectural expression of practical requirement. This structure, which calls for the extensive use of fine marbles, stone, and bronze—richly carved and wrought from well prepared drawings and models, provides opportunity for the arts which elaborate and work up these materials.

It does not aspire toward originality—it remains a symbol of force and power proclaiming aloud its costliness and solidarity of purpose. The net result is assurance of permanence with "Chicago scale," bearing all the attributes of a vigorous city of affairs successfully wooed by the ancient glory of Imperial Rome.

Its broad architectural form is decidedly Roman in character, although here and there one finds a touch of Greek detail or Renaissance ornament.

Following the Aristotelian precept of a beginning, middle, and end in its design, the exterior treatment begins with the circular arched banking room windows act-

ing as a base for the super-imposed shaft of office floor space above, crowned by a colonnade for the top stories. The tower portion extends through in like theme, stepping back in the shape of a pyramid which culminates in a huge beehive.

Entrance to the office part of the building is frankly subordinated to the monumental banking room entrance occupying the central arch of the Michigan Avenue front. Richly carved bas-reliefs flank the subdued marble portal which, with its beautifully modelled and executed bronze doors, framed in the deep set limestone archway rising from the sidewalk some forty feet to its crown, presents a striking example of contrasts effectively arrayed. Indiana Limestone is used for the entire exterior.

The store fronts with wide expansive display windows are set in delicately ornamented bronze frames with a rich cresting, purposely ignoring the supporting structural columns of the super-structure by an independent treatment giving maximum show space for rental purposes. A wide belt course carved with a Greek fret acts as a solid lintel above the glass window between the central arch and the corner piers, which alone are carried down in stone to the sidewalk. Nowhere is the importance of the banking room made secondary in consideration. Even the floor height of the stores is purposely kept low to avoid too great a rise to the main floor above.

The tower portion, rising to a height of 475 feet, contains the first office space in Chicago used for rental occupancy above the building height limit of 264 feet, thus making practical application of the new zoning ordinance, based on volume, which provides for additional space above the height limit not to exceed twenty-five per cent of the area of the premises and one-sixth the volume with a setback of one foot in ten from all lines of adjacent property.

Above the thirty-second story at the base of the beehive, 450 feet above the ground, are installed a complete set of cathedral chimes which sound the "Cambridge Quarters"; an exact counterpart of the Metropolitan Tower bells in New



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Main Stairway

THE STRAUS' BUILDING, CHICAGO, ILL.
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View Across Banking Room

THE STRAUS BUILDING, CHICAGO, ILL.
Graham, Anderson, Probst & White, Architects



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May, 1925

Bronze Door, Main Entrance

THE STRAUS BUILDING, CHICAGO, ILL.

Graham, Anderson, Probst & White, Architects



Officers' Room
THE STRAUS BUILDING, CHICAGO, ILL.
Graham, Anderson, Probst & White, Architects

York City. The largest bell weighs three and one-half tons. The other bells weigh 3,000, 2,000 and 1,500 pounds respectively, graduated in size proportionately with the following dimensions:

| Bells | Diam. at Base | Height |
|-------|---------------------|--------|
| No. 1 | 5'10" | 4'8" |
| No. 2 | 4' 5" | 3'8" |
| No. 3 | 3'11" | 3'3" |
| No. 4 | 3' 6" $\frac{1}{2}$ | 2'1" |

These bells chiming the "Quarter" are automatically driven by an electric control master clock located directly beneath, which, in addition to playing a few bars of the famous Handel melody every fifteen minutes, sounds the full hours. While soft and rich in tone, the penetrating resonance of the bells is sufficient to be heard for miles under favorable conditions, achieving in this subtle manner valuable advertising.

At night the beehive is a beacon of

light. Its external skin of heavy translucent glass reflects a gold tinge by day but at night it is illuminated from within by multicolored electric lights and flashes.

Modern building demands present ever increasing opportunity for giving play to the architect's imagination and ingenuity, and call for the incorporation of mechanical devices at a costly outlay, the sole purpose being to attract public attention.

Every effort in this regard opens up a vein of creative endeavor which, if properly taken advantage of, will eventually reach the realm of art. Therefore, we pass by with tolerance the many attempts which leave our aesthetic sense cold for the sake of that surging idea pregnant with future promise which combines utility with the highest architectural art and skill.

The Straus Building was built primarily

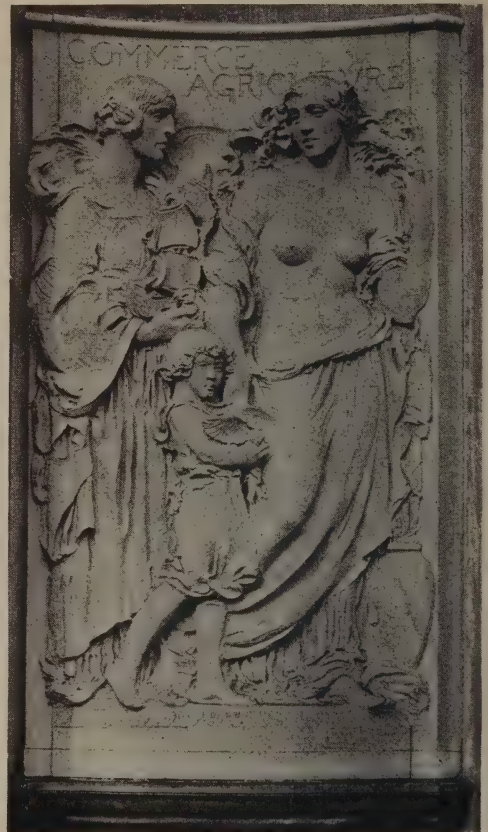


Bas-Relief at Main Entrance
THE STRAUS BUILDING, CHICAGO, ILL.

to house a great financial institution dependent largely on the general public good will for support. Those entrusted with the design and execution of this huge structure were never once swayed by the emotion of the creative mind. They followed along the smooth path of accepted precedent, content to achieve a bigger, better, and more striking effect than the other fellow. The result is massive impressiveness, surpassing in grandeur and costliness any work of like character in Chicago. This impressiveness reaches its keynote in the grand banking room located on the second floor on the Michigan Avenue axis. A single revolving door separates the outside from the broad marble stairway leading by degrees to the sanctuary of finance above. Starting with a wide flight of six steps

across the full width between side walls up to a landing, the main stairway divided by a polished bronze railing of Spanish-Italian influence gracefully rises to another landing about four feet below the main floor, where it divides into two short flights leading to the right and left. Hauteville walls, Tennessee marble floor and risers with touches of Belgian black are the materials employed. Suspended above this stairway is an immense lantern-like lamp finished in antique gold with crystalline panels suggestive of the opulence of a Doge's palace.

Upon reaching the top of the stairs one is suddenly struck by the orderly spaciousness of the huge Basilica-shaped banking room with symmetry, stateliness, and vigorous simplicity expressed in all the grand manner of Augustan Rome.



Bas-Relief at Main Entrance
THE STRAUS BUILDING, CHICAGO, ILL.

This room measures one hundred and seventy feet in length by one hundred and sixty feet in width, towering to a height of forty-five feet through three normal stories. Sixteen columns of the Corinthian order forty feet in height and four feet in diameter, support an ornamental coffered ceiling decorated in bronze and gold, with touches of Italian iridescent blue, reds, and greens. From the ceiling are suspended two chandeliers finished in antique gilt and bronze, each containing one hundred and thirty-two amber colored bulbs which shed a mellow light over the entire room. Beyond the lateral sides of the Colonnade, vaulted arches of massive proportions furnish a fitting background for the central treatment. These arches extend the full width of the room to the north, forming about the exterior windows, and are interrupted on the opposite side by a mezzanine serving offices and conference rooms against the elevator side. The ceiling between columns and arches is decorated with panels of a deep shade of blue bordered with a stenciled design in gold. Decorative cast bronze bracket lights of Italian design are placed on each of the piers supporting the arches.

On the center axis of the room seen through a

vista of vaulted ceiling and flanking columns a large stained glass window measuring twenty-four feet in height by fourteen feet in width is set in the rear wall above the cages. This window, done in the Florentine style, shows a full-rigged ship of the sixteenth century at the center, with figures representing Art and Justice at either side, and a small scroll near the top bearing dates of the founding of S. W. Straus & Company, beginning of erection, and

completion of the building. Large keys in the picture represent the keys to the vault. Pale amber tones predominate in the color scheme, with reds, blues and greens softly blended. Toward the end of day when daylight fails, special electric flood lights set back of the window bring out in subdued fashion the full coloring, figures, and design.

The principal materials used in the finish of the room are Hauteville marble, Travertine stone and Belgian black marble for the base lines and other trimmings. Railings on the bank floor and on the mezzanine balcony are of wrought and cast iron covered with gold leaf and then painted to give an antique effect.

The walls are treated in Travertine stone while the columns and the pilasters at the end



Main Entrance Detail
THE STRAUS BUILDING, CHICAGO, ILL.
Graham, Anderson, Probst & White, Architects.

are of Hauteville marble. Column capitals are of Art marble and the central coffered ceiling is of pre-cast plaster imitation Travertine. The vaulted ceiling on the Jackson Boulevard side is in bas-relief depicting various phases of American history and development. Gold medallions placed above the arches along the north and south sides of the room represent the following coins from various cities of Ancient Greece.

I. Coin of the City of Thurium, showing the head of Pallas Athené, wearing a crested Athenian helmet.

II. Greek Tetradrachm, showing head of the youthful Heracles in lion skin.

III. Coin of the city of Naxos, showing a bearded man, with band around head.

IV. Coin of the city of Syracuse, the capital of the Greek colony in Sicily, showing head of Persephone surrounded

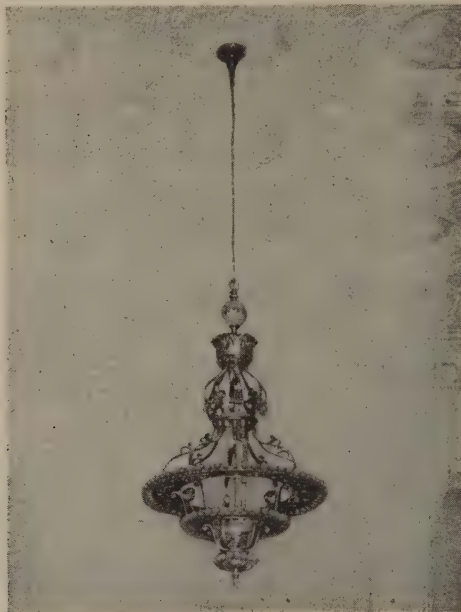
by dolphins. She wears a wreath of corn leaves.

V. Coin showing the Lyre of Chalcidice. This coin of the Chalcidean League was struck at Olympus after B.C. 392 and before the time of Philip of Macedonia.

Centered on the bank floor is a platform for the use of salesmen, measuring forty-one feet by twenty-seven feet, slightly raised, and enclosed with railings of Travertine marble. This floor, carried out in polished Belgian black marble, presents a striking contrast to the light marble used in the main floor spaces. Just back of the salesmen's island are the banking cages. Highly polished black Belgian marble is used up to the counter level of these cages, and the posts of the screens are of black and gold over metal.

Careful handling of material and uniformity of design are maintained throughout the whole of the building.

[For additional illustrations, see pages 417-423.]



Chandelier in Main Banking Room
THE STRAUS BUILDING, CHICAGO, ILL.

EARLY COLONIAL HAND FORGED IRON WORK



By Myron S Teller

HAVE YOU ever wanted a bit of iron work forged and desired to give your personal instruction to the craftsman? Perhaps you were fortunate enough to know or have someone recommend one of the older journeymen in a country village, or maybe a shop off the main highway, yet conveniently located to a well settled farming neighborhood, such as the one pictured on the following page.

There you found large doors swung wide, revealing a dimly lighted, smoky and dusty interior with cobweb rafters. From the cross beams hung row on row of iron shoes; odd parts of wagons and other farm implements stood propped along the walls; a wheel in the process of making or mending lay on the floor, the blacksmith meanwhile being fully occupied with the shoeing of a horse. His customer stood watching the fitting of the shoe, at the same time exchanging neighborhood gossip with the smith and other locals who had dropped in to pass the time of day.

In just such an atmosphere those old iron hinges and latches of Colonial days were made. No doubt a Jones, a Van Deusen or a Schuyler of that period went personally to the smithy to make known his wants much the same as is done today in our rural districts.

The blacksmith of olden days was an important personage and has been lauded in both Poetry and Song. In the early days of our America a village that did not boast a master of this craft was indeed sadly lacking. For not only was the smith's work concerned with the shoeing of horse and ox, but with the repair

of wagons and various implements of farm and mill; often, indeed, it included the making of these tools. Thus one can easily see that the fashioning of hardware fitments for the house in no way took prior place in the smithy.

At this period, iron was rarely used in the framing together of buildings. Timbers were generally hand hewn, mortised, tenoned and fastened together with oak pins, including the frames for doors and windows; even floor boards were fastened with wooden pegs. Some of the hinges, latches and bolts were fashioned in wood, others in leather. This would seem to indicate not only the scarcity of blacksmiths at that time, but also the scarcity and high cost of iron. That the latter was none too plentiful, is proved by a record which exists of the burning of an old building in order to obtain its nails and spikes.

We find many a strap hinge forged from old worn tire irons, a fact easily discerned by examining such pieces. Other bits of iron were heated, welded together and forged into a great variety of hardware fitments and household utensils.

In this lighter branch of his trade the Colonial smith often delighted in showing his ingenuity and skill to which the form and finish of many examples of this old iron work can testify.

In the early settled parts of our country where it has been my fortune to visit and observe these wares, I have always found examples of hinges and latches with arrow head, spear point, heart or bean shaped ends. These seem to be the common forms used without regard as to



A COUNTRY BLACKSMITH'S SHOP

whether the settlement was by the Dutch, French or English, thus showing the influence of a mother school.

Many houses built in what is called Colonial style lack in minor but important Colonial detail. If you would restore a house in the spirit of the old or rebuild after a certain style, surely it is only reasonable that such details as the doors, windows, trim and hardwood fittings should be designed and made to represent faithfully the style chosen. Yet in this respect little attention seems to have been paid heretofore to the application of hand forged hardware.

This style of Colonial hardware is generally found in the village and country house, a few types of which are illustrated here. (See Pages 397-399). The illustration on Page 400 suggests a modern type to which the hardware is adaptable.

Within these houses we find wide board floors and batten doors, the doors of the more important rooms being generally paneled. The ceilings are low, formed of

the wide boards of the floor above and supported with heavy hand hewn beams, spaced several feet apart. The fire-places are of generous width, with high lintels of wood or brick, and broad hearths paved in brick and stone; occasionally the opening of an oven shows at one side, or it may be in the splay of the fire-place jamb. The mantels are simple and often of quaint design, with cupboards tucked away in unexpected places.

In this environment of hand hewn, hand mortised, hand planed—in other words, hand made—wood work the hand-forged iron work of the Colonial blacksmith finds a most companionable setting, such as in the old frame farm house at Woodstock shown on Page 399.

Examples of this old work are fast disappearing, and it is to be regretted that in the plates or works of reference for the student of architecture that exist so little information is given on the subject of the hardware of the Colonial period. For those desirous of adopting this style,



COUNTRY HOME OF MR. VAN LEAR WOODWARD, KRIPPLEBUSH, ULSTER
COUNTY, NEW YORK
(Formerly Van Dermarke Homestead)

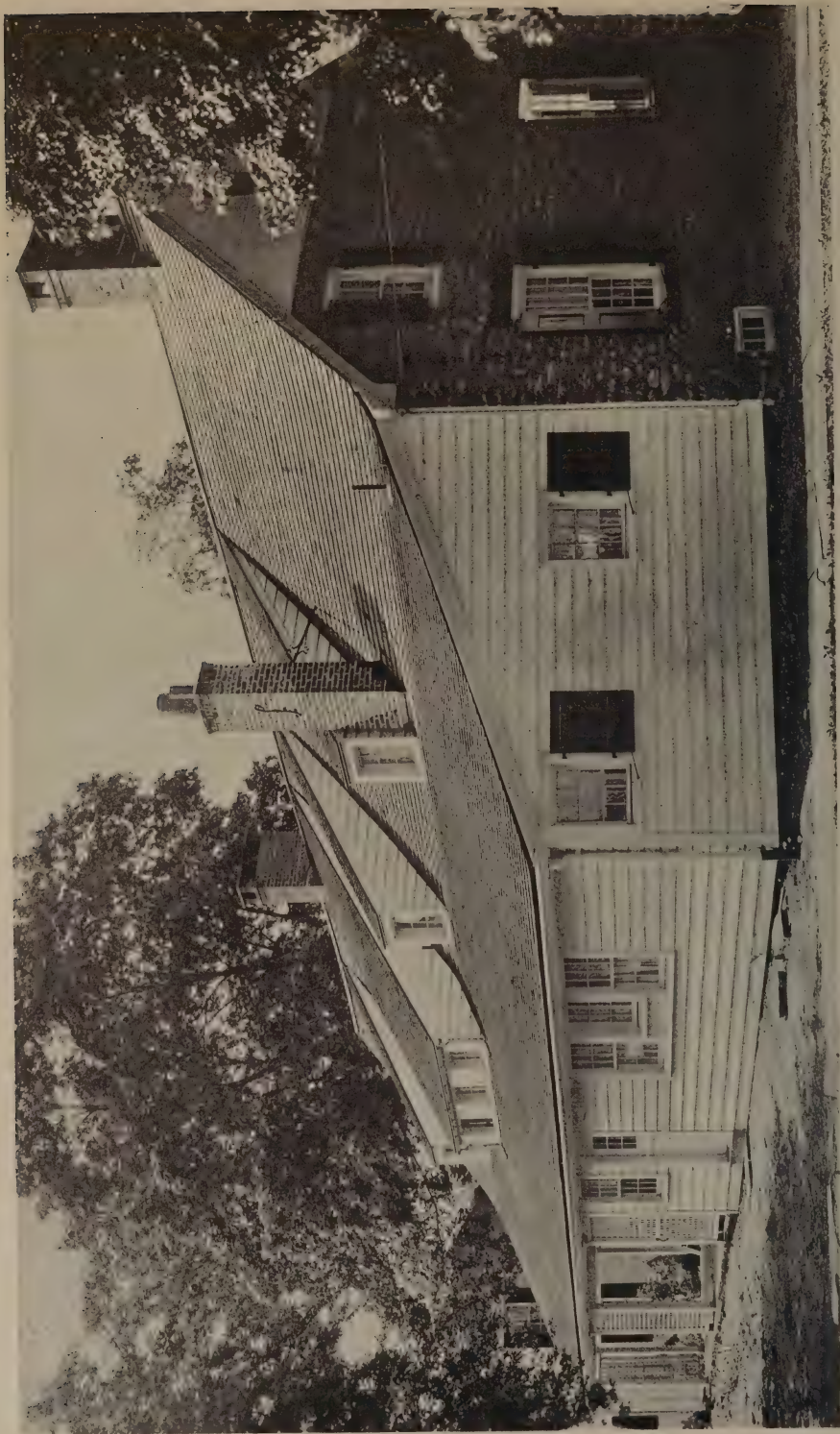
it is hoped the illustrations and remarks given in this short article will be helpful in the preparation of details for the proper application of the hardware fittings.

In many old houses as we find them to-day, the hinges and latches have already been removed from the doors in the more important rooms and replaced with modern rim locks and mortise butts, the ear-marks of the old hand forged latches and hinges showing under the paint. Perhaps only parts of the service wing and outbuildings still claim the original iron work fashioned by the blacksmith.

Colonial hardware in general was made to apply over a flat surface, and if you will examine the doors and frames of a house built eighty or more years ago, or note the measured detail drawings of old Colonial work, you will invariably find the doors and shutters fitted flush with the frame they set in, that is, the

face of the door and at least a portion of the frame or casing is on the same plane, as illustrated in Fig. 1 on Page 403. Most of the frames were built of solid timber, three to four inches thick and six to ten inches wide, mortised, tenoned and held together at the corners with wooden pins. On one inside edge a rebate was cut to receive the thickness of the door so that when set in, it finished flush with the frame or casing. The hinges and latches were applied directly on the surface of these, and the strap or H & L hinge and the bar of the latch and bolt could lap over as required without a bend or offset. The heavy frames afforded a substantial fastening for the hinge pins, and the latch and bolt keepers, which were usually driven into the solid wood.

The same hardware may be applied to the modern built up frames of to-day if care is taken to have a stud set close to the finished jambs when being fitted in



May, 1925

RESIDENCE OF W. ANDERSON CARL, KINGSTON, NEW YORK
(Formerly Gerritt Van Keuren House)

The Architectural Record



HOMESTEAD OF JESSIE M. ELTING, NEAR NEW PALTZ, ULSTER COUNTY, NEW YORK



The Architectural Record

May, 1925

OLD FRAME FARM HOUSE, WOODSTOCK, NEW YORK



MODERN COLONIAL FRAME FARM COTTAGE
to which hand-forged hardware has been adapted

place as shown in Fig. 1. When the opening is framed, a double stud is set plumb on the hanging side of jamb leaving a rough opening $2\frac{1}{2}$ inches larger than the overall width of the finished jambs. As soon as the jambs are set and trued up a 2×4 -inch stud is fitted close against the other finished jamb, thus giving both sides a solid backing or post to receive the hinge pins and latch keepers. Hinge pins and latch keepers mounted on plates may also be used; these are applied with screws and nails. In either case the essential requirement is, that a portion of the casing, at least 2 inches wide, shall be flat and on the same plane with the door to receive the hinges and latches without requiring special offsets or bends.

THE BATTEN DOOR AND ITS HARDWARE. The inside batten doors were usually made up of two wide hand planed boards of varying width, with a third and narrower board in between to make up the required width of door. The edges of this middle board were tongued and beaded. These were nailed to cross

battens placed near top and bottom. Occasionally a door was made of one marvelously wide board, though this was rare. Some were made of two boards, but in the great majority of cases the typical Colonial batten door consists of three boards as above described. (See Figs. 2 and 10). The edges of the battens were usually beveled or finished with a bead, sometimes with a rule joint mould. The boards were fastened to the battens with hand-made nails clinched on the batten side. On the wider doors a third batten was placed across the middle of the door, as shown here. This also served as a lock rail to receive the latch handle.

In many cases on outside doors and shutters vertical stiles were applied between the battens along the outer edge of door or shutter, thus forming panels. In Fig. 4, the shutters are built of one wide board with panels formed on one side in this manner. Again in Fig. 7, we have the shutters with narrow vertical boards on the edges and a wide panel board in between—thus a panel could be



Living Room



Dining Room



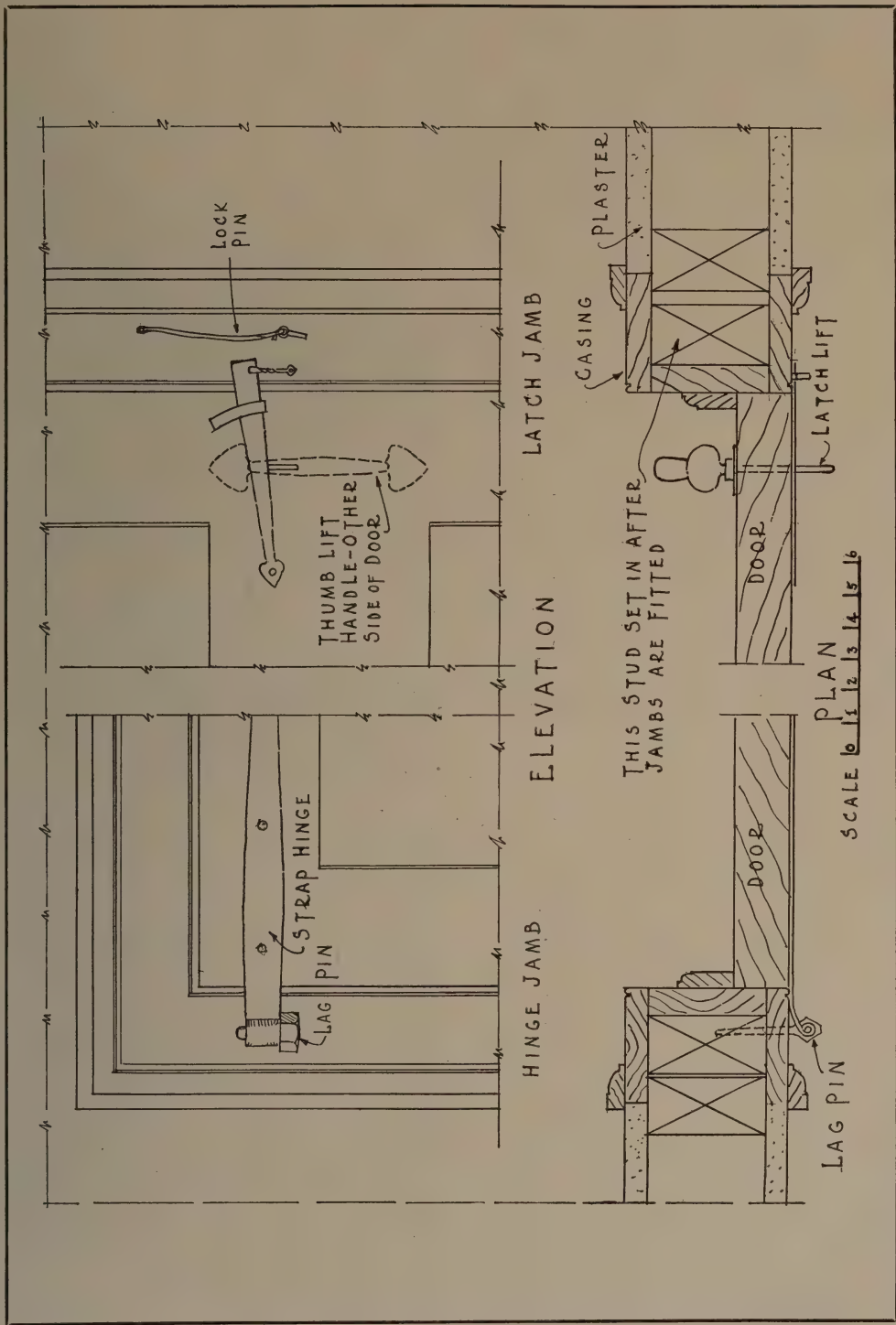
Stair and Entrance Hall
RESIDENCE OF W. ANDERSON CARL, KINGSTON, NEW YORK



The Architectural Record

Living Room
RESIDENCE OF MRS. HARRY GORDON, KINGSTON, NEW YORK
(Formerly Tobias Van Buren House)

May, 1925



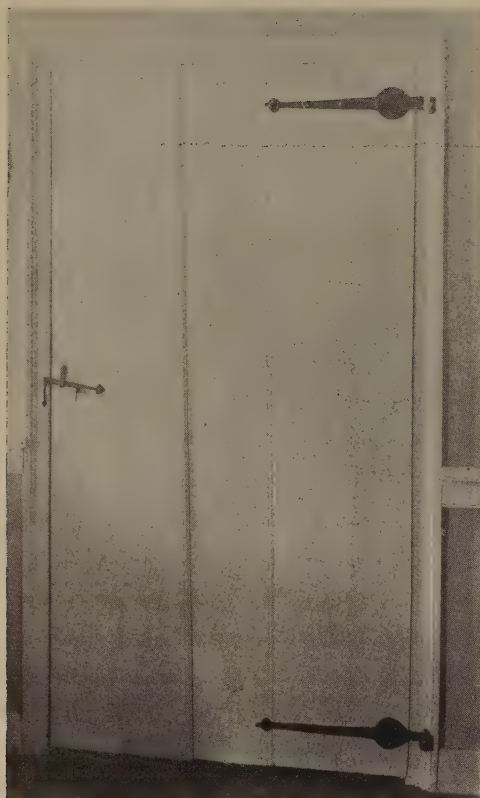


Figure 2

formed without a joint showing on panel side.

Strap hinges are properly best suited to the batten door or shutter, as they help to reinforce these cross battens in holding the vertical boards together. The eye of the hinge is curled to fit easily over the hinge pin. In some examples the eye is formed by looping over and welding together. Holes are punched in the straps to receive the hand-made nails which are driven through and neatly clinched flush with the grain of the wood on the opposite side. Often we find a small square of leather placed under the head of the nails which make them hold snug to the strap when clinched.

In some cases we find the H L hinge used on inside batten doors as illustrated in Fig. 3, though more often they are used on the paneled doors and cupboards. Fig. 5 shows various forms of H and H L cupboard hinges. The catch or fast

for cupboards was more often a wood button.

Fig. 6 shows a variety of old strap hinges. The third, fourth and fifth at left of plate are typical Dutch straps, found in Ulster County, New York. The sixth hinge is similar, but with refined tapered lines and edges neatly beveled. This hinge was found in Connecticut. The bottom hinge is a crude form made from old tire iron and probably taken from a barn door. The top hinge, 42 inches long, is probably from a barn door. The second on the right is interesting in the pinching at heel and denotes that a double strap eye or loop pin may have been used, though this was sometimes done to make the iron thicker at the point of curling over the pin. The third and fourth at the right are barn door hinges

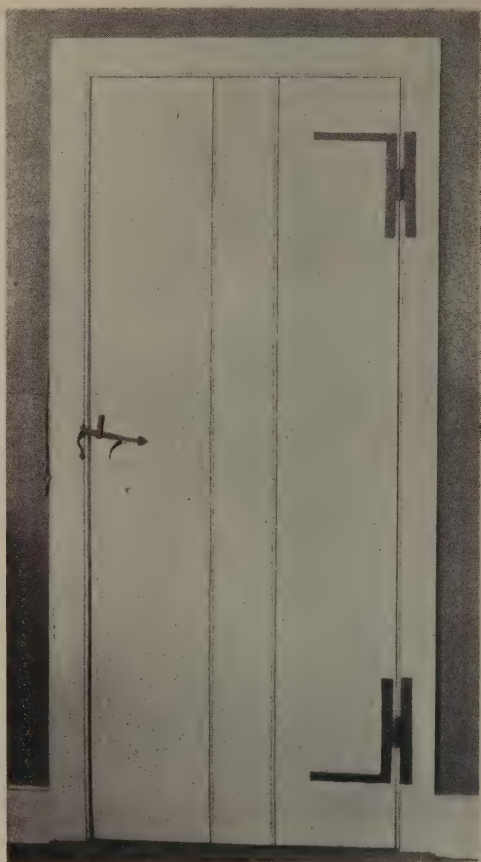


Figure 3



Figure 4

MAIN ENTRANCE, RESIDENCE OF W. ANDERSON CARL

with an offset bend over the stile of door and not over the frame as holes in the strap prove! The two hinges at bottom are familiar types of door and shutter hinges found throughout the colonies with slight variations. Fig. 8D shows a form of Dutch strap with scroll and bracket pin. Figs. 8H, 8I, 8J show three forms of straps and hinge pins; the first a lag pin, the second a plate pin, the third a loop through eye often made of the two pieces of an old ox shoe.

The other hardware fittings were the latch with thumb lift handle shown on the doors illustrated. Fig. 9 shows a variety of latch handles used on the inside doors. They vary from seven to nine inches overall, except 9H and 9I, which are outside door handles and measure twelve to thirteen inches in height. In some handles the thumb lift pierces the flat plate at top; in others a square neck

is formed just above the grip of the handle and the thumb lift passes through and is pinned. The latch consists of a bar of iron six to eight inches long with the end shaped similar to that of handles. The guide or guard is usually in the form of a staple with ends clinched through the door; occasionally this is curved or of segment shape. The keeper or catch pin was often formed with a bracket neatly twisted and with end finished to match the latch bar. Fig. 9, K to U, and Fig. 14, E and F, illustrate this in detail.

The hardware for the batten Dutch door is perhaps the least understood and more errors are made in fitting the hardware for this type than on other doors. In Fig. 10 the door at left shows the hardware as originally applied, which is typical for these doors. The clinching of nails will be seen in the battens. The hinge pins and the straps are secured as

before described. The upper half of the door opens first. The latch on the upper half is operated by a drop handle from the outside; to this a spindle is attached passing through the door with a cam fitted at the end. When the drop handle is turned this cam lifts the latch. The lower latch has no connection with the outside, and is operated from the inside only, or after the upper half is opened one may then reach over from the outside and free the lower latch from the catch pin and so enter. The door was usually locked by inserting a pin in a hole bored just above the latch bar on the upper door; this pin was hung on a leather thong at the side of the door. Additional throw bolts were also used. Fig. 15, M to Q, shows a detail of the assembly for the latch and a variety of the

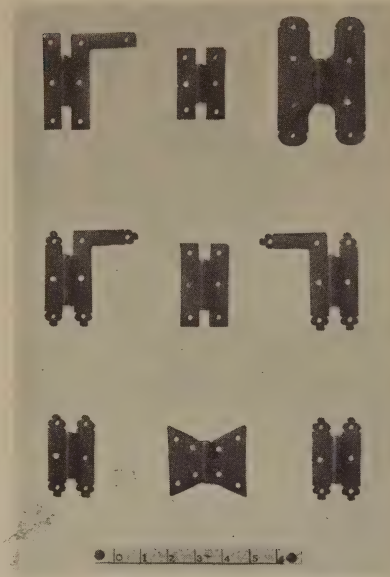


Figure 5

usual form of stirrup or drop handle found on these doors. Fig. 15, G to L, shows parts of the latch.

Little hardware showed on the outside of the Dutch door as will be seen in Fig. 7, which is also an interesting example of a Dutch door with butt and bead panels, in which the upper and lower half each have two vertical panels and one cross panel; the door is set with the flush side to the street. It is also interesting to note in this figure the heavy log frames of both door and window sup-

porting the stone work above, the head piece of frame serving as the lintel.

PANELED DOORS. The five and six paneled butt and bead doors (called button-bead), are perhaps the most common type we find. The panels were sunk on one side of door, sometimes without

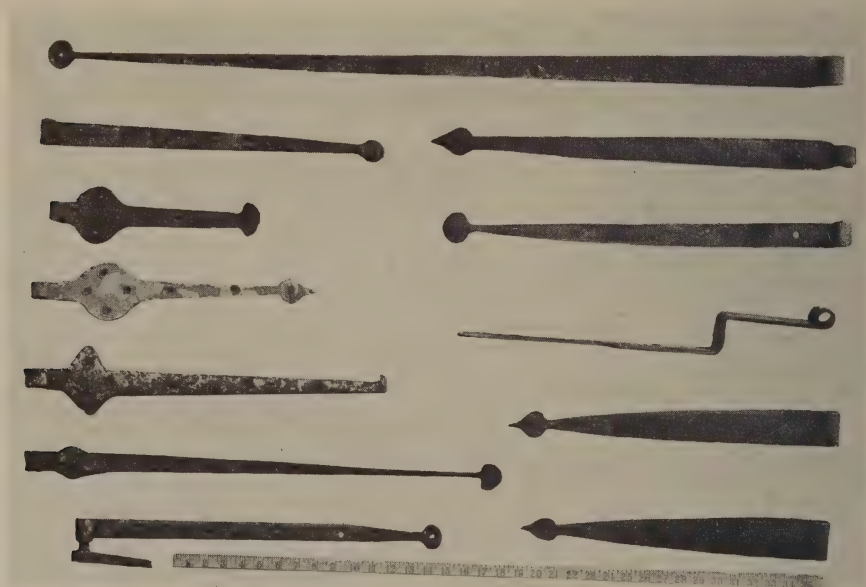


Figure 6



Figure 7

moulding, and on the other side they finished flush with the stiles and rails. The panels were tongued into the stiles and rails, and the edge of the long side of panel board was beaded to hide any shrinkage at joint. The end joints were fitted tight and smooth to the cross rails without beading. Figs. 11 and 12 show the two sides of a five-paneled door and Fig. 13 shows a six-paneled door, butt and bead type.

These doors were usually hung with H and H L hinges*, though we do find cases of strap hinges used on them, especially on the outside doors. We also find them fitted with types of latches, such as those illustrated, and again the spring latch with lever and knob handles as well as rim locks. However, these last more often replaced the earlier hand-wrought latches.

*There is a legend from the down East country that if one door in the house is fitted with an H hinge at the top and an H L hinge at the bottom the house is protected against evil spirits.

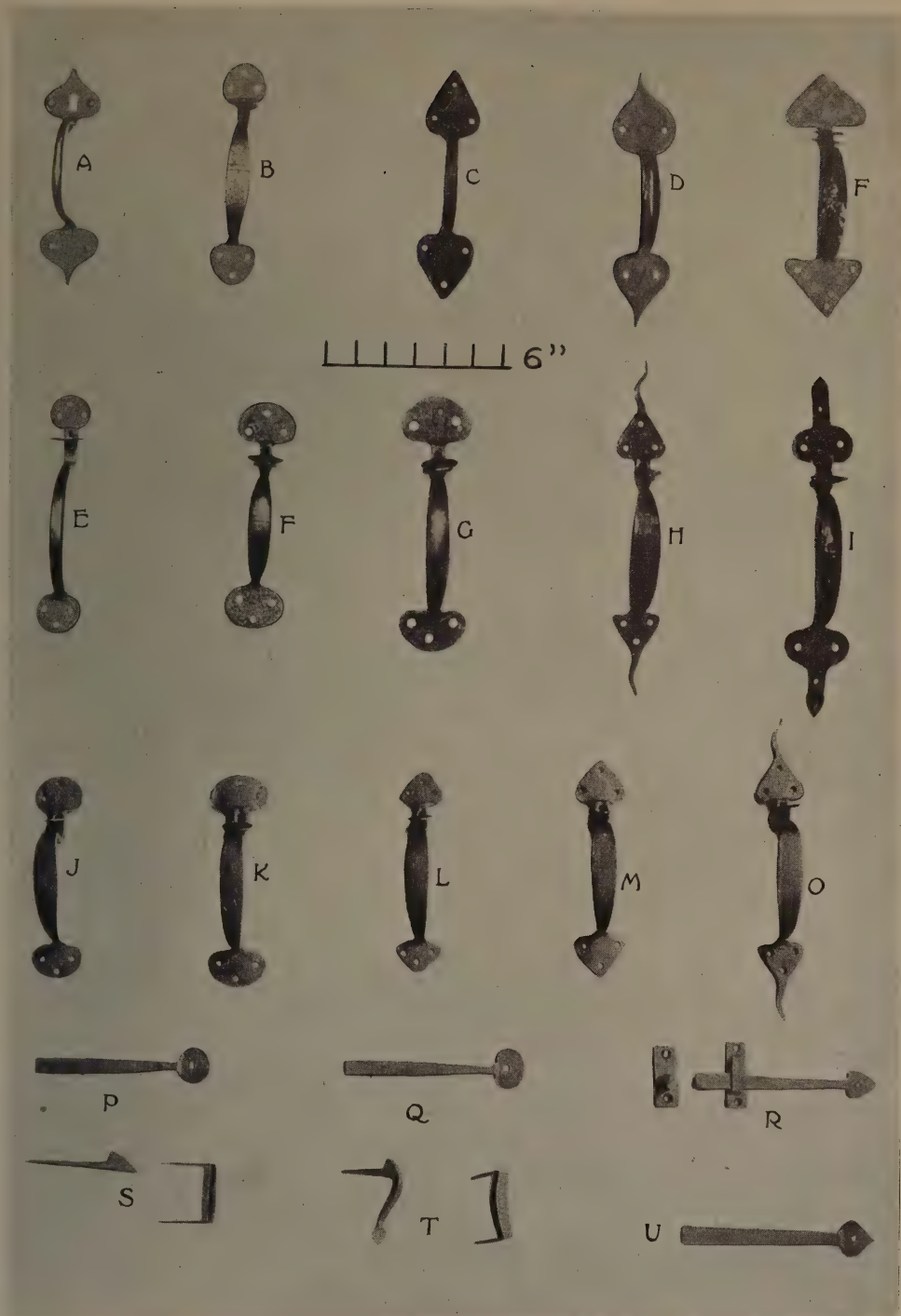
On the outside doors, whether batten or paneled, the strap hinge was favored. (See Fig. 13.) In some localities an angle hinge as in Fig. 8, A, B and C was used. Those illustrated are reproductions of old patterns.

The latches and handles for the outside doors were larger and usually heavier than for the inside doors, some measuring fifteen to twenty inches overall. It is in these we find the greater variety of fancy in design.

Fig. 16, J to O shows a number of old thumb latch handles. Fig. 16, A to E are recent reproductions modeled after old patterns, the first three from Connecticut—the last two from Pennsylvania. Fig. 14, C and F, also reproductions, are used on the front door of the Carl residence, (See Fig. 4.)

Fig. 14, B and E show another form with the latch guide and keeper mounted on plates, the ends of the plates being shaped like that of the latch bar. Fig. 14, A and D show a form of wrought iron





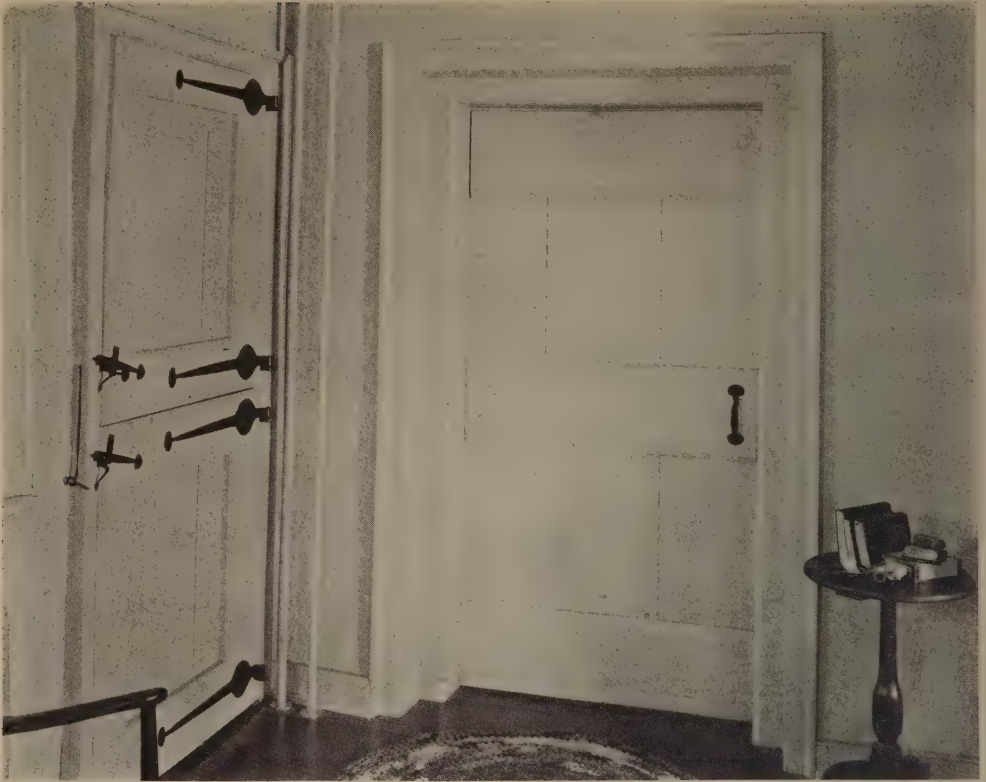


Figure 10

handle with thumb lift operating a modern mortise front door lock. The top plate is formed to combine the key escutcheon as part of the outside handle. The inside handle is of similar form, except that a separate turn knob on the plate is provided for turning the dead bolt. Fig. 16, F to I, shows another design of handle to be used in the same manner. Any form of thumb latch handle may be used to operate a mortise lock that is provided with a latch trip.

The thumb latches forged by the blacksmith on the anvil should not be confused with the thumb latch handles mounted on plates or other spring latches operated by lever handles and knobs. While some of these may have been made by a blacksmith, they are in the main the product of the tinker or locksmith for whom in more important centers there developed an opportunity to ply his trade of specializing in these later and modified forms of latches.

These spring and plate latches are found more in the city or town house, and occasionally in the more important rooms of the country manor house where the squire had means that permitted him to purchase such hardware, though in many cases they only replaced the older hand made latches. We also find the hand forged blacksmith latches and hinges in parts of the city and town house and so with judgment, both may be properly used together.

SHUTTER HARDWARE. The shutter hardware is found equally interesting. Hinges were of much the same shape as used on doors and hung in the same manner, on iron pins or thumbs driven into the solid frames. We also find the hinge pins used, mounted on a plate. Angle hinges are often found on paneled shutters. (See Fig. 15, A. to F.)

The shutters were fastened with a small hook to a pin driven in the sill and

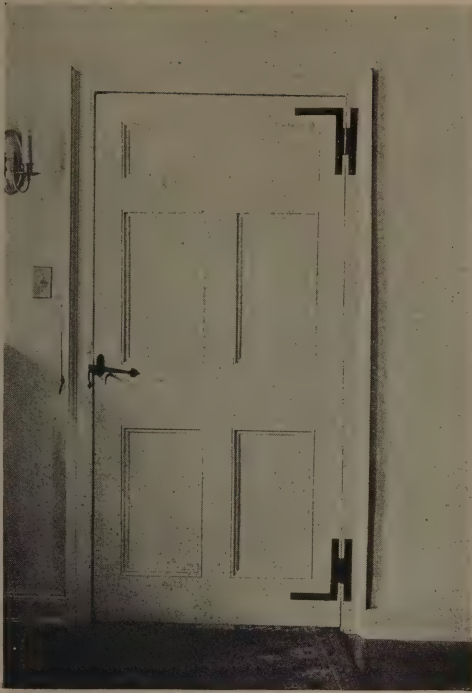


Figure 11



Figure 12

locked together with a wood cross bar to drop in irons; later, slide bolts were used and a ring pull was placed on the shutter to be swung in last. Long hooks held the shutters open; these were fastened to the shutters or to the sill of frame as the builder or owner fancied best. (See Figs. 4 and 7.) Other devices called shutter dogs or hold-backs were also used for holding the shutters open. These were of various forms. (See Fig. 17.)

There were many other pieces of hardware which the blacksmith was called upon to provide and show his handiwork, such as gutter hooks, chimney irons, wall anchors and weather vanes, which often recorded the date of building.

(See Fig. 17.) Of door knockers and mud scrapers a great variety of forms are still to be found in the older parts of early settled towns and cities. Examples of some Baltimore mud scrapers are shown in Fig. 18.

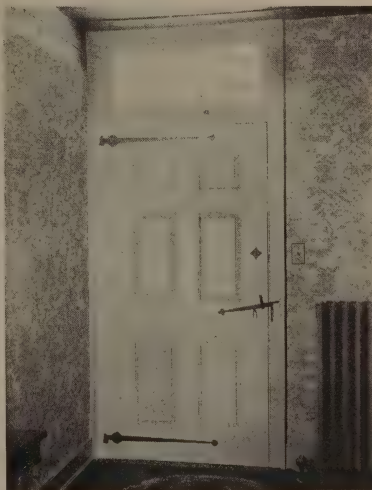


Figure 13

The fire-place afforded another outlet for the blacksmith to display his skill in fashioning the trammel irons, pot hooks, cranes, oven doors, fire tongs, fire dogs, slicing bars, trivets, toasters, etc. (Fig. 18). Even the cooking utensils such as skewer sets, forks, ladles, skimmers, skillets, etc., were made of iron, the handles often beautifully fashioned, all to be kept brightly scoured and hung in their appointed place along the edge of the mantel shelf. To de-

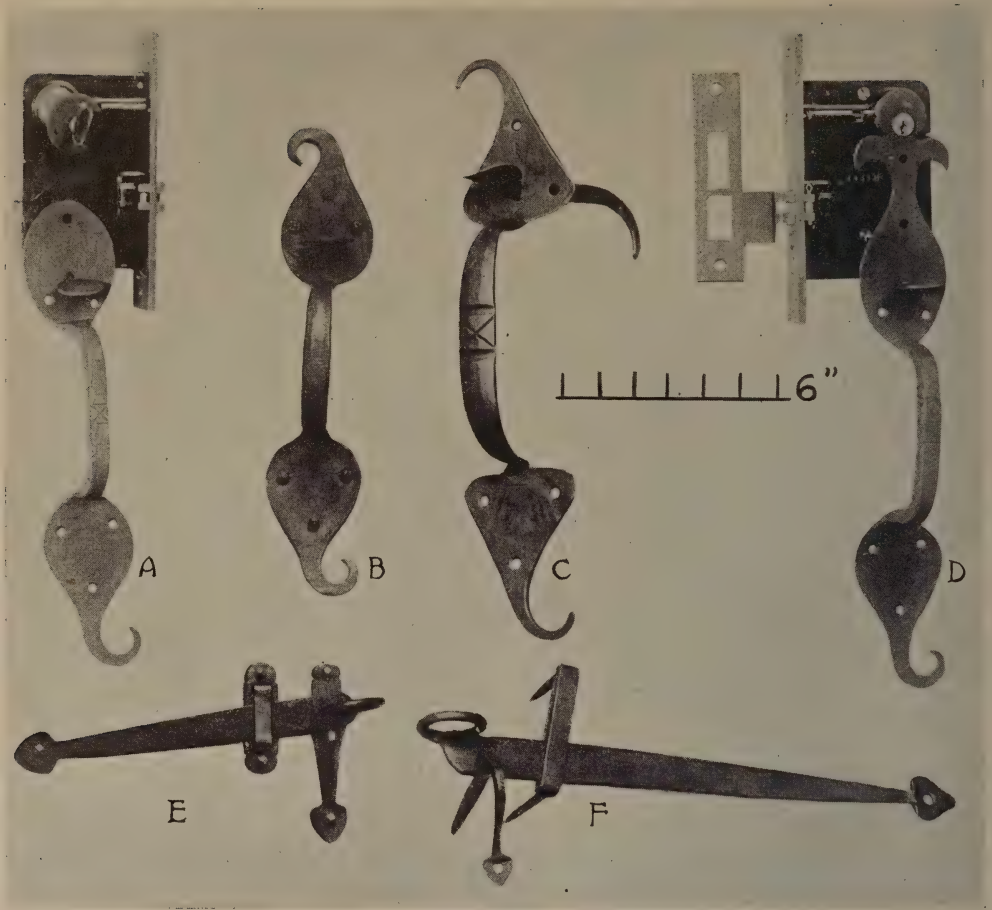
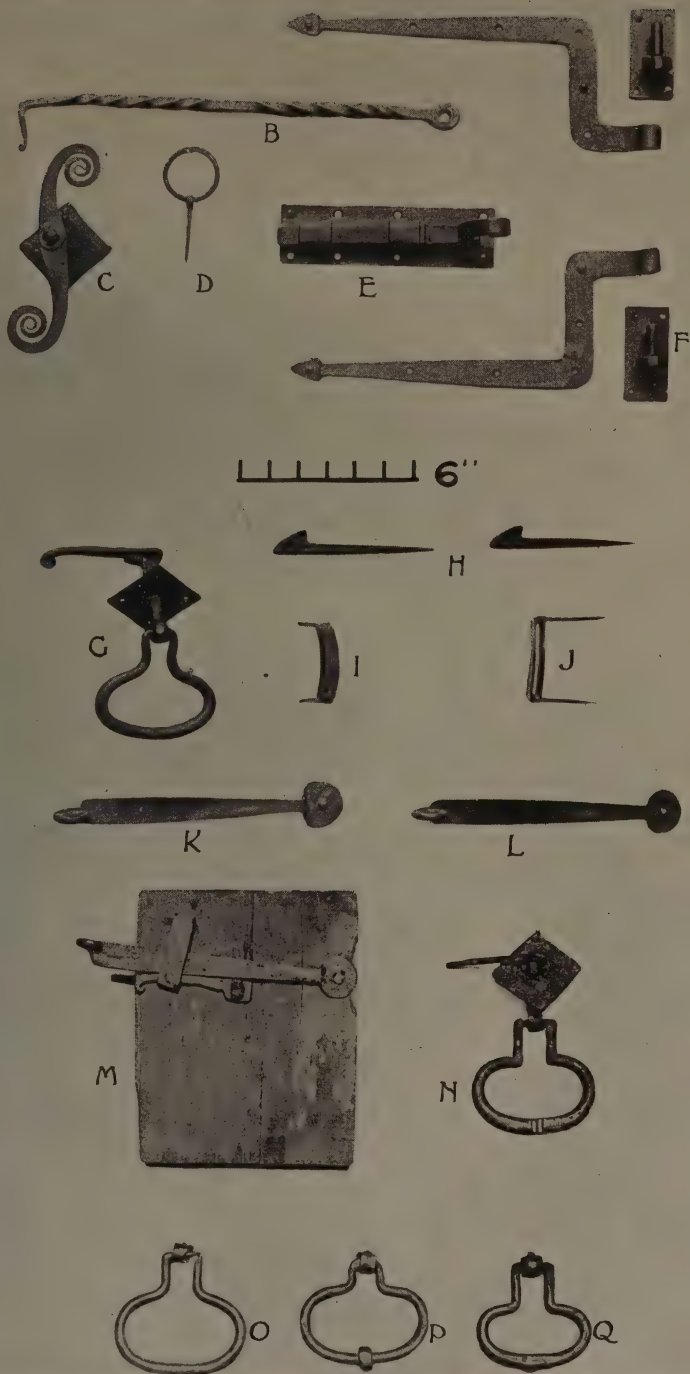


Figure 14

scribe adequately all these would require a good sized volume.

The examples illustrated here prove that there are today men of this craft with the ability to reproduce these wares and others who would learn if there were

masters with patience to encourage and guide them in reproducing faithfully this style of hand forged iron work, the attraction of which lies not only in beauty of workmanship, but in the simple suggestion embodied of their use in the home.







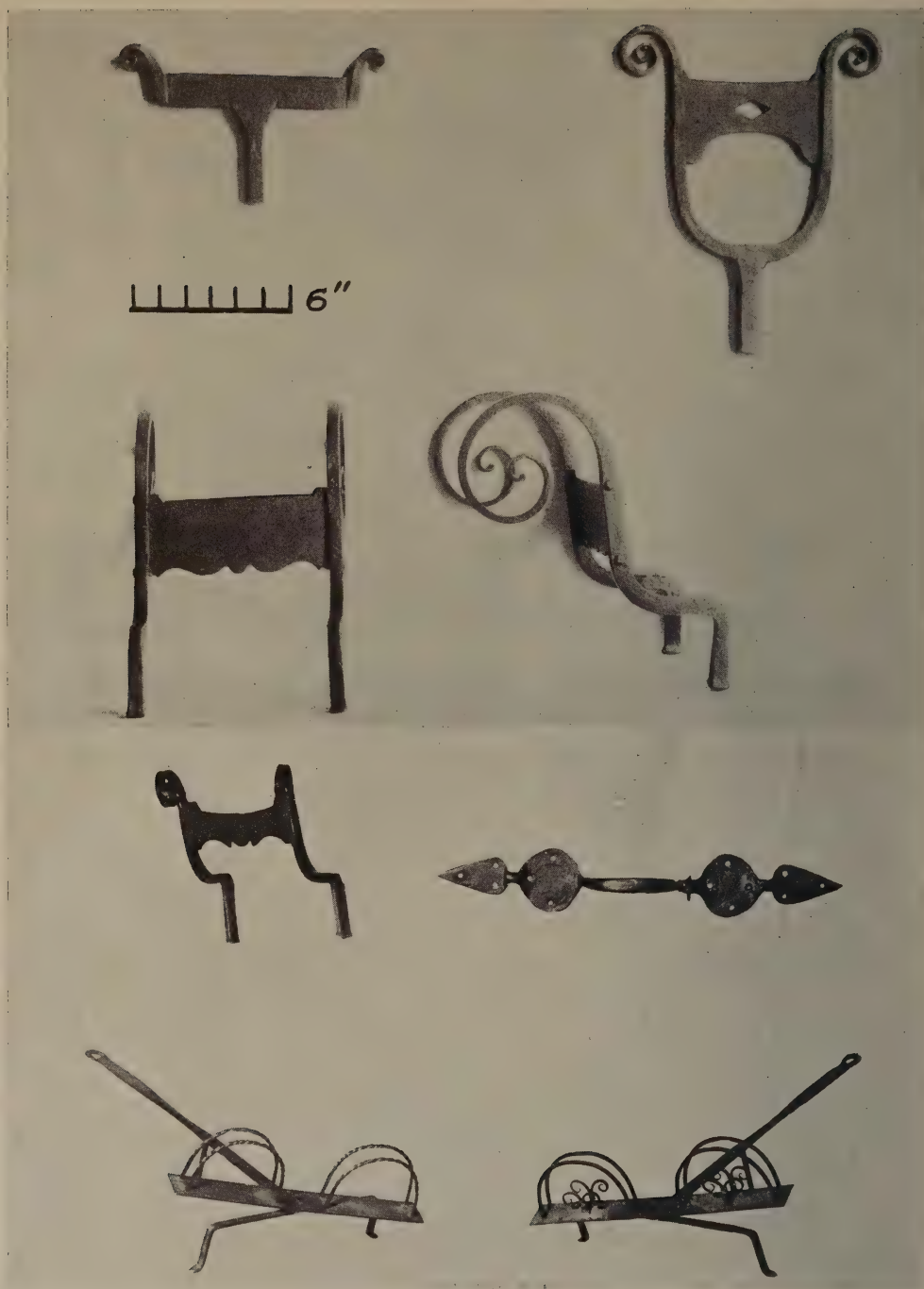


Figure 18

P O R T F O L I O

C V R R E N T · A R C H I T E C T V R E



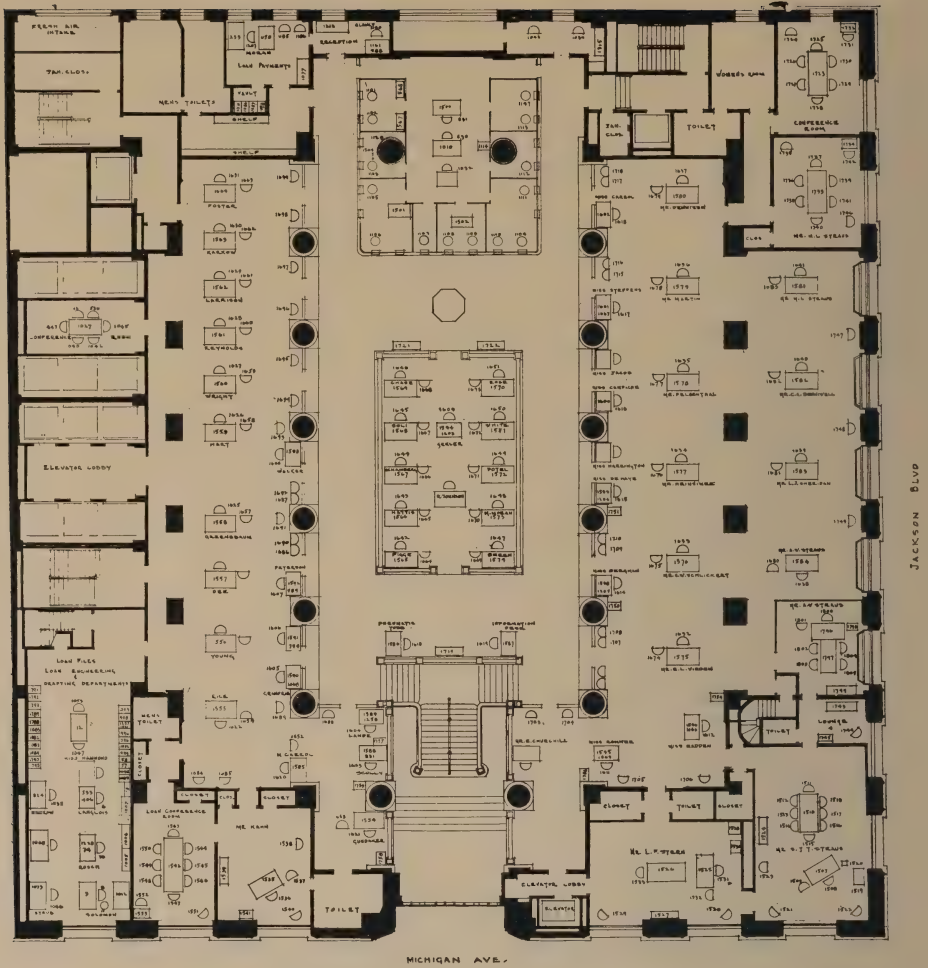
Side Aisle and Colonnade
THE STRAUS BUILDING, CHICAGO, ILLINOIS
Graham, Anderson, Probst & White, Architects

(See page 385)



One of the Officers' Rooms
THE STRAUS BUILDING, CHICAGO, ILLINOIS
Graham, Anderson, Probst & White, Architects
(See page 385)

ALLEY



BANK FLOOR PLAN

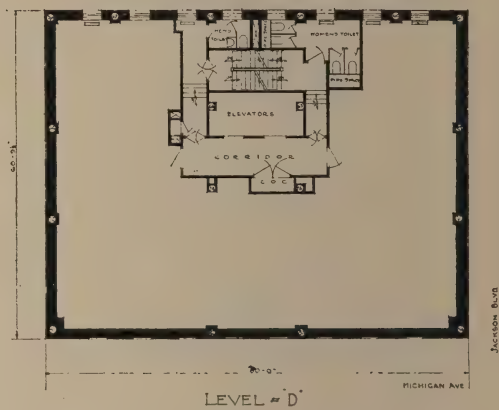
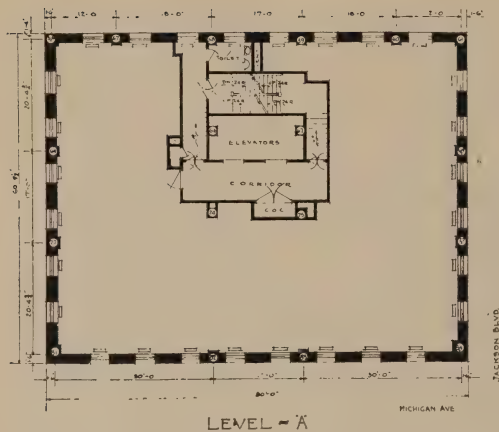
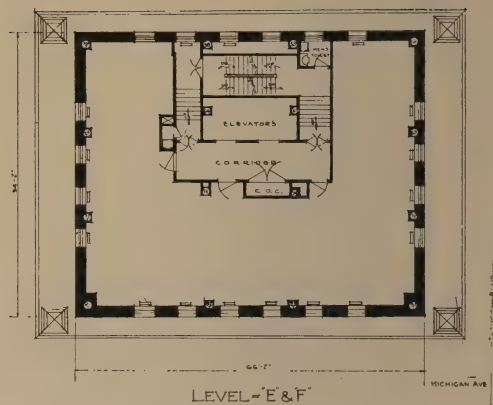
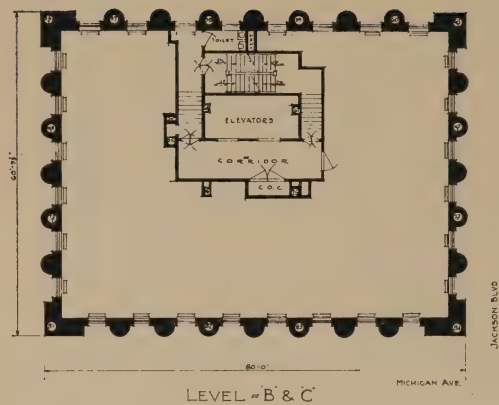
THE STRAUS BUILDING, CHICAGO, ILLINOIS
Graham, Anderson, Probst & White, Architects



The Colonnade from Top of Main Stairway
THE STRAUS BUILDING, CHICAGO, ILLINOIS
Graham, Anderson, Probst & White, Architects
(See page 385)



Leaded Glass Window at End of Banking Room
THE STRAUS BUILDING, CHICAGO, ILLINOIS
Graham, Anderson, Probst & White, Architects
(See page 385)

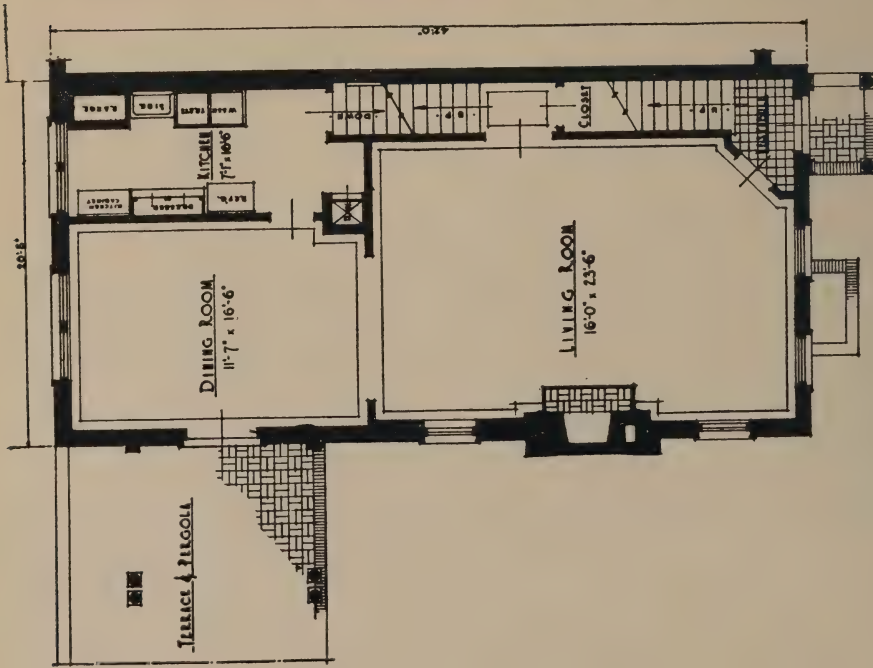


Tower Floor Plans

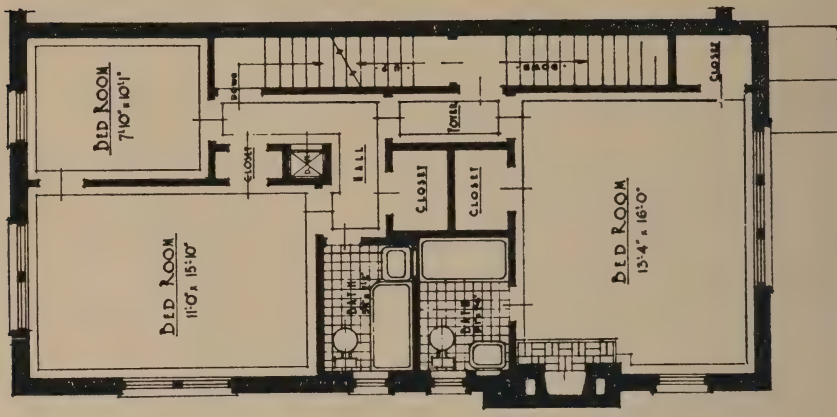
THE STRAUS BUILDING, CHICAGO, ILLINOIS
Graham, Anderson, Probst & White, Architects



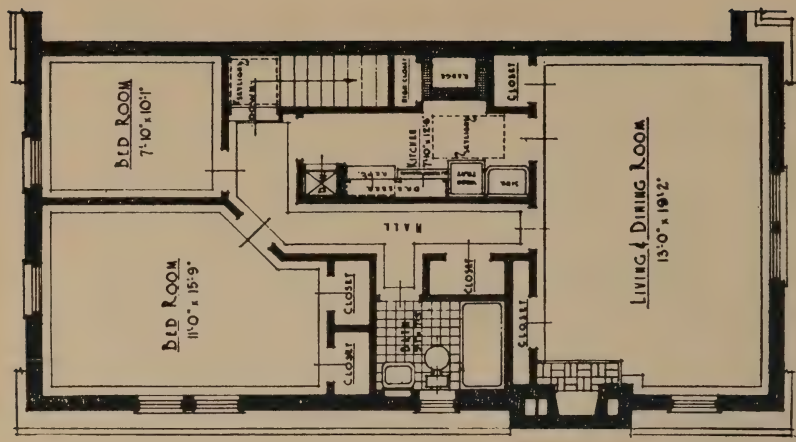
CONVERTIBLE TYPE HOUSES FOR THE QUEENSBORO CORPORATION
C. F. & D. E. McAvoy, Architects
Leonard C. L. Smith, Engineer



FIRST FLOOR PLAN



SECOND FLOOR PLAN

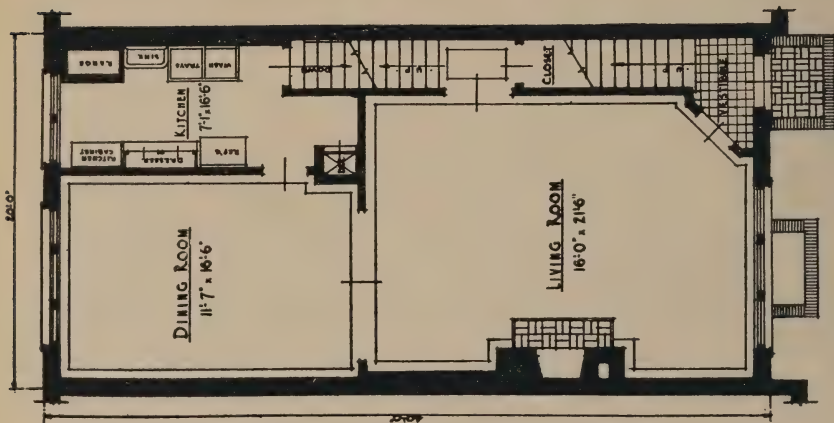


THIRD FLOOR PLAN

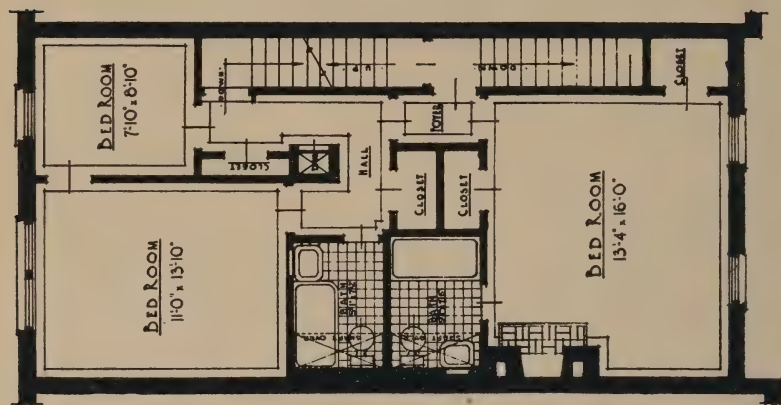
.TYPE-A.
 LOCATED AT EACH END OF GROUP OF FIVE HOUSES
 CONVERTIBLE TYPE HOUSES FOR THE QUEENSBORO CORPORATION
 (Patents applied for 1923-4)
 C. F. & D. E. McAvoy, Architects
 Leonard C. L. Smith, Engineer



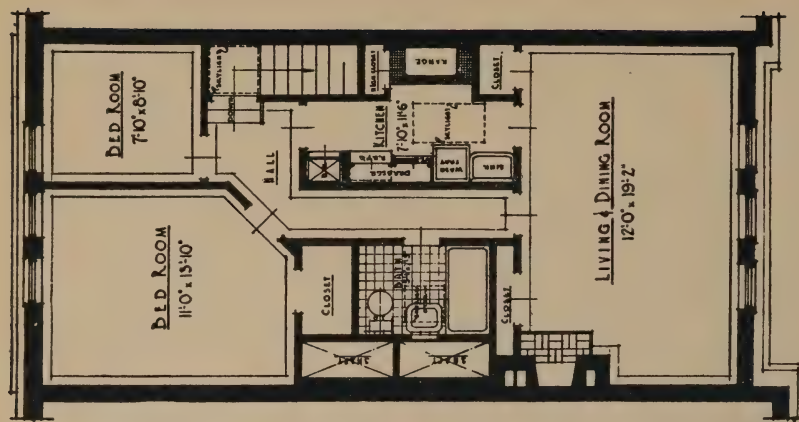
Detail Showing Garage and Service Driveway
CONVERTIBLE TYPE HOUSE FOR THE QUEENSBORO CORPORATION
C. F. & D. E. McAvoy, Architects
Leonard C. L. Smith, Engineer



FIRST FLOOR PLAN



SECOND FLOOR PLAN



THIRD FLOOR PLAN

TYPE B.

LOCATED NEXT TO END HOUSES IN EACH GROUP OF FIVE HOUSES.

CONVERTIBLE TYPE HOUSES FOR THE QUEENSBORO CORPORATION

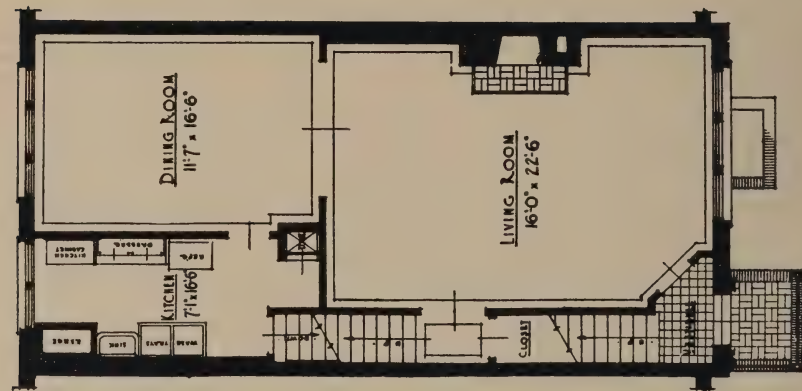
(Patents applied for 1923-4)

C. F. & D. E. McAvoy, Architects

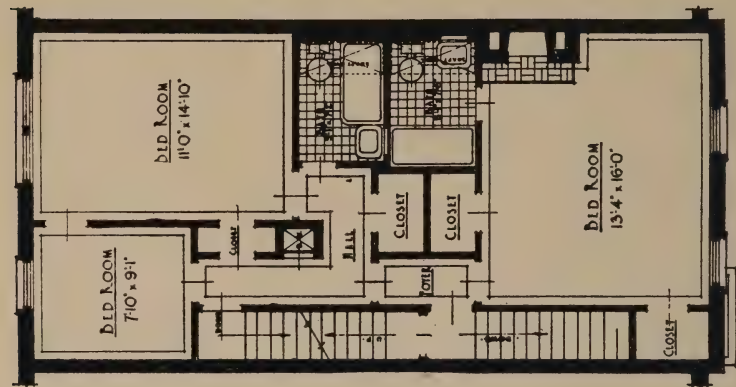
Leonard C. L. Smith, Engineer



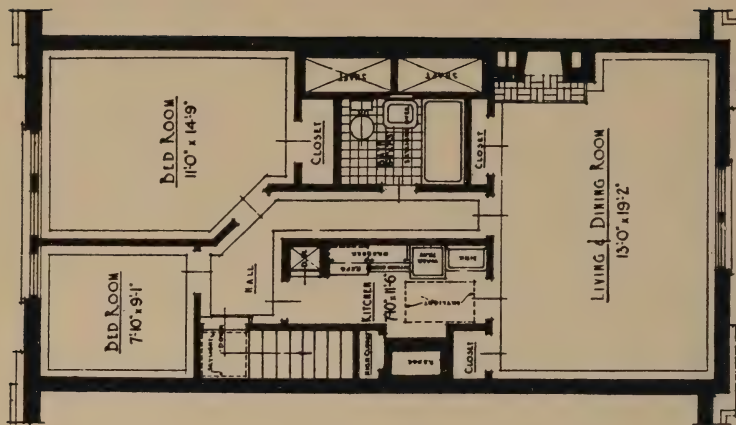
Detail Showing Garage Entrance
CONVERTIBLE TYPE HOUSES FOR THE QUEENSBORO CORPORATION
C. F. & D. E. McAvoy, Architects
Leonard C. L. Smith, Engineer



FIRST FLOOR PLAN



SECOND FLOOR PLAN

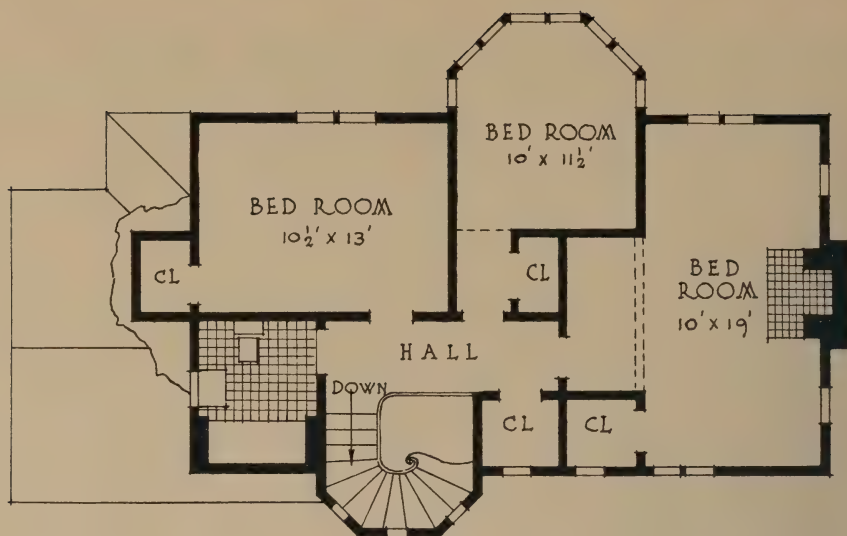


THIRD FLOOR PLAN

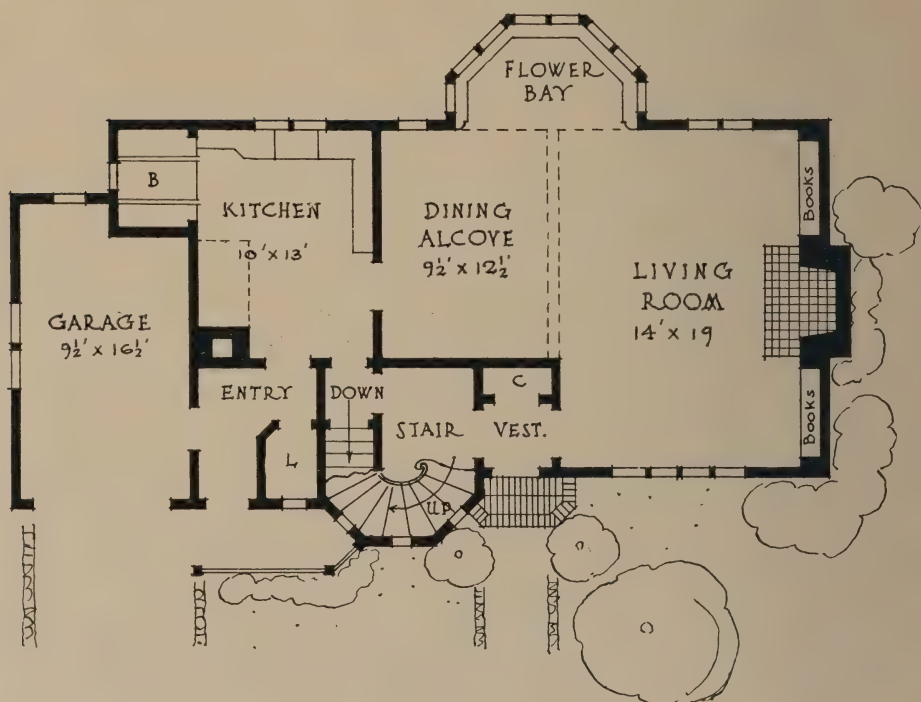
TYPE-C.
 LOCATED AT THE CENTRE OF EACH GROUP OF FIVE HOUSES.
 CONVERTIBLE TYPE HOUSES FOR THE QUEENSBORO CORPORATION
 (Patents applied for 1923-4)
 C. F. & D. E. McAvoy, Architects
 Leonard C. L. Smith, Engineer



RESIDENCE OF JOHN A. BECKWITH AT PORTLAND, OREGON
Harold W. Doty, Architect



PLAN OF SECOND FLOOR



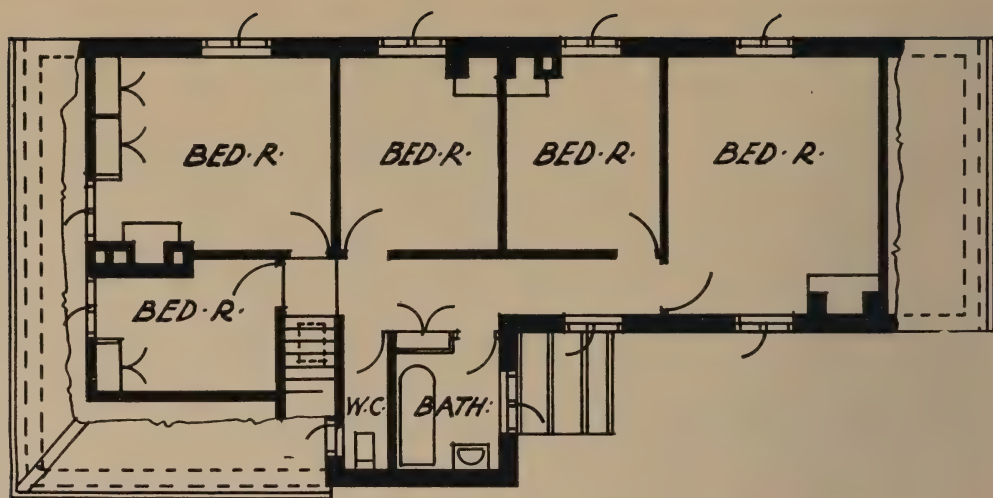
PLAN OF FIRST FLOOR

RESIDENCE OF JOHN A. BECKWITH AT PORTLAND, OREGON

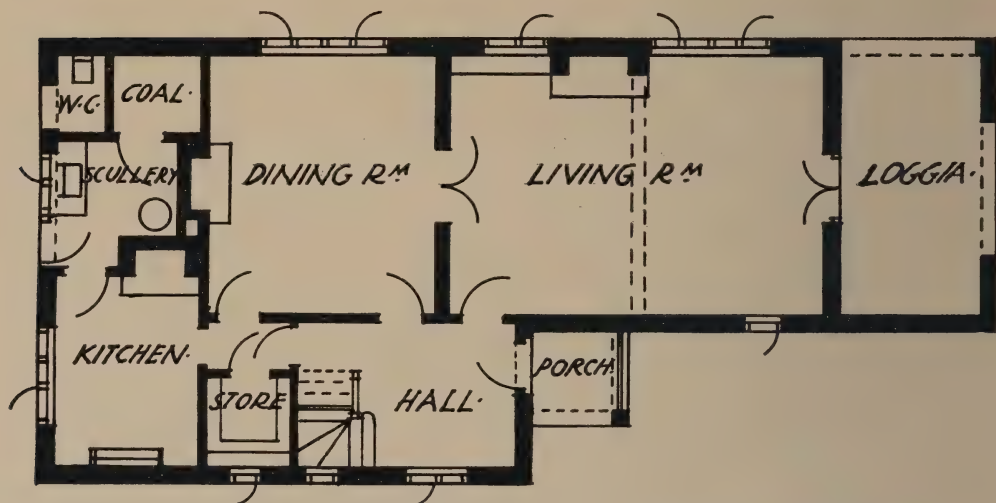
Harold W. Doty, Architect



Detail Showing Terrace
HOUSE IN WOODMANSTERNE ROAD, CARSHALTON, SURREY, ENGLAND
Robert Atkinson, F.R.I.B.A., Architect



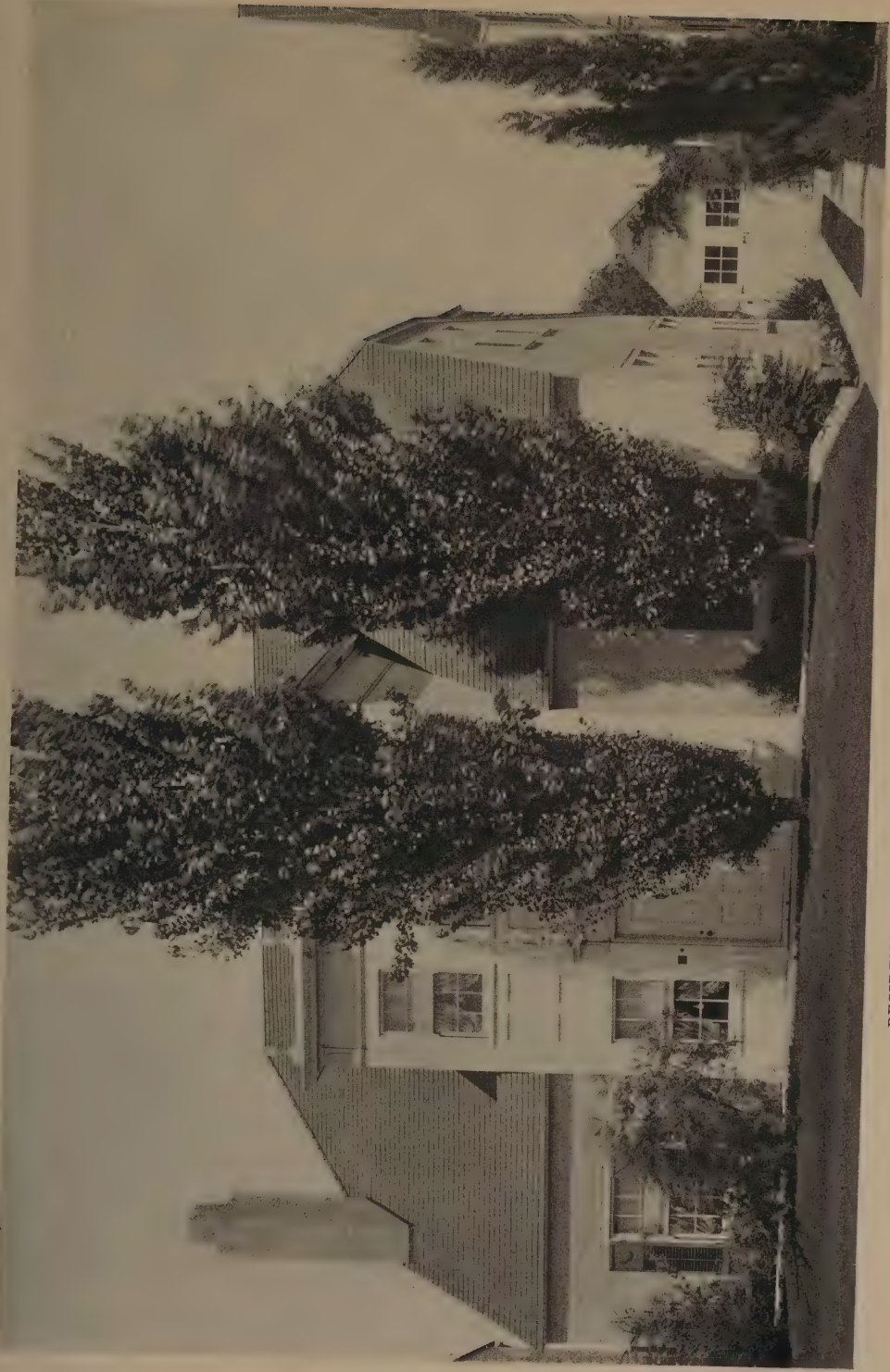
‘FIRST FLOOR PLAN.’



GROUND PLAN

HOUSE IN WOODMANSTERNE ROAD, CARSHALTON, SURREY, ENGLAND

Robert Atkinson, F.R.I.B.A., Architect



RESIDENCE OF T. BEVERLEY KEIM, JR., LOS ANGELES, CALIFORNIA
T. Beverley Keim, Jr., Architect



Entrance Detail

RESIDENCE OF T. BEVERLEY KEIM, JR., LOS ANGELES, CALIFORNIA

T. Beverley Keim, Jr., Architect



Living Room

RESIDENCE OF T. BEVERLEY KEIM, JR., LOS ANGELES, CALIFORNIA

T. Beverley Keim, Jr., Architect



Perspective View

PIEDMONT HIGH SCHOOL, PIEDMONT, CALIFORNIA

W. H. Weeks, Architect, San Francisco



Detail of Wing
PIEDMONT HIGH SCHOOL, PIEDMONT, CALIFORNIA
W. H. Weeks, Architect, San Francisco



Perspective View

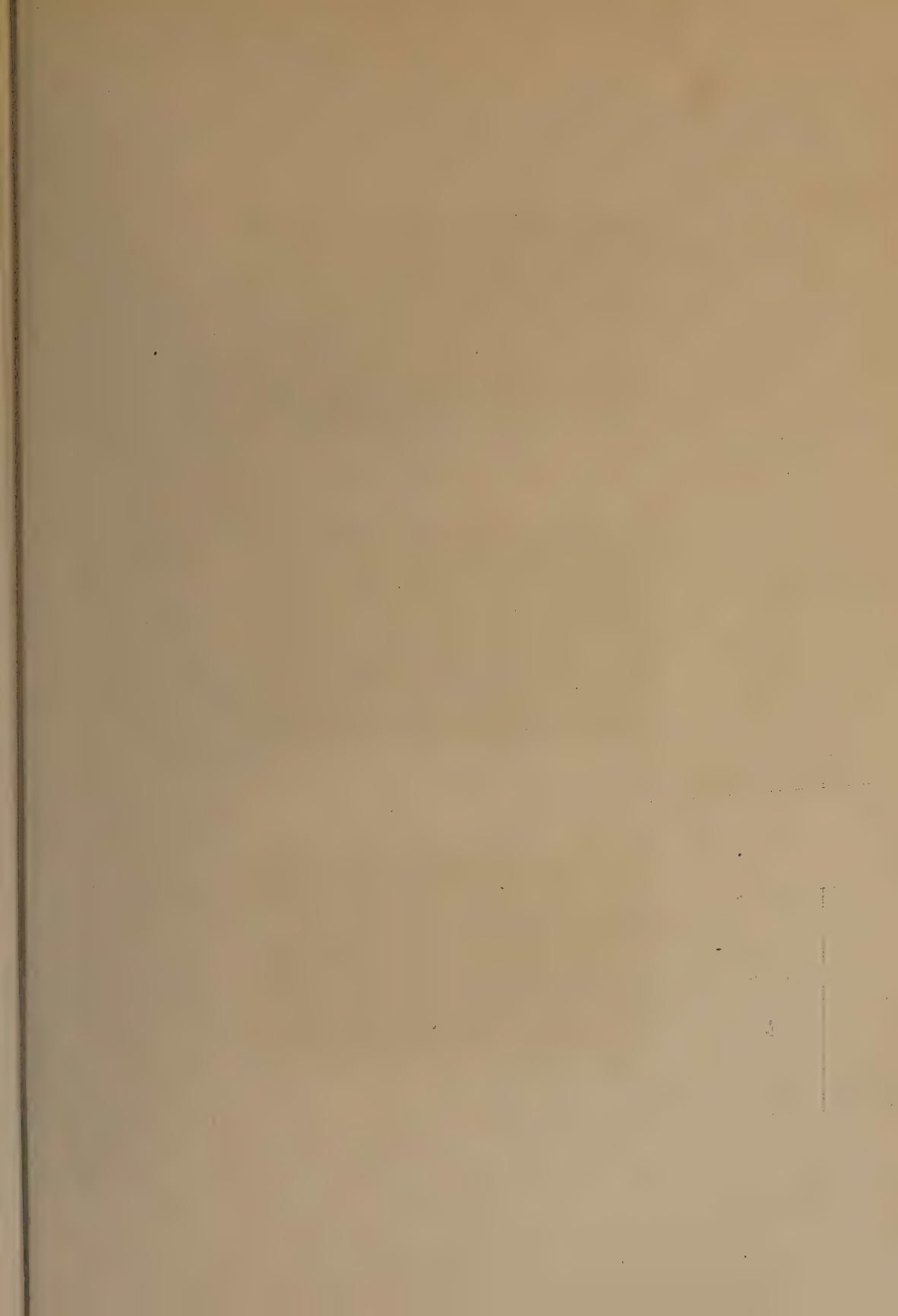
JOHN L. SHEARER GRAMMAR SCHOOL, NAPA, CALIFORNIA

W. H. Weeks, Architect, San Francisco



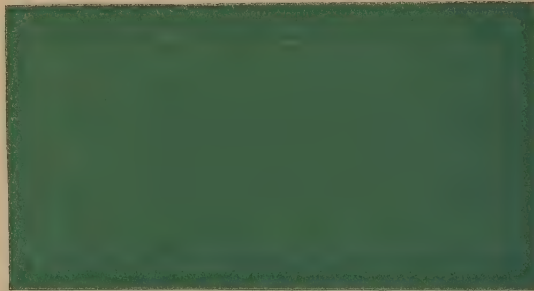
Entrance Detail

JOHN L. SHEARER GRAMMAR SCHOOL, NAPA, CALIFORNIA
W. H. Weeks, Architect, San Francisco

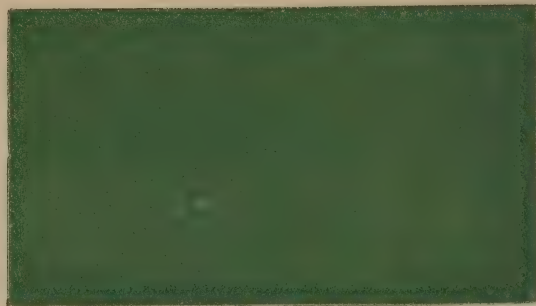




SUBDUED LIGHT



FULL LIGHT



TRIM

EVEREST GREEN

COLOR *in the* OPERATING ROOM

By

Paluel J. Flagg, M.D.

IN AN ARTICLE entitled "*A Scientific Basis for the Use of Color in the Operating-room*"* the author presented a review of the limited literature on the subject. The conclusions to be drawn from this review are as follows:

The exclusive use of white in operating-room decorations and draperies has become more and more impractical as the complexity of surgical intervention has increased. For delicate operations in the abdominal cavity, nose and throat and elsewhere necessitate increased illumination of this field of operation. Increased illumination gives rise to increased reflection and eye strain.

This difficulty has been widely recognized, and color in walls and draperies has been employed to relieve the situation. While black, grey, green, and even red has been used, grey and green have enjoyed the greatest popularity. The choice of a particular hue, and the intensity of this hue, however, was over such a wide range that no definite standard was offered. Dr. Sherman of California approached the goal when he suggested a green the color of the spinach leaf. But since the color of the blood varies with the amount of oxygen which it contains, and since the color of the spinach leaf varies with its age, the problem from a scientific point of view remained unsolved.

The situation appeared to the writer to present three clearcut difficulties each of which demands solution, namely, illumination, color fatigue and reflection.

ILLUMINATION

Personal observations extending over several years have convinced the author that daylight in the operating-room is not essential. A constant volume and quality of illumination, however, is es-

sential to the standardization of color in the operating-room, since all color proceeding from a reflecting surface, walls, floors, furniture, draperies, etc., owes its hue to the light which falls upon it. We are familiar with this principle in stage lighting, but when the same principle is repeated in the so-called daylight bulbs or in a cluster of opal lamps, we do not recognize the distortion of the spectrum. The seriousness of this matter will be grasped from the following:

During the course of an operation the color of the blood and the tissues is an index of the amount of oxygen in the blood.* The variations of the oxygen content under a general anaesthetic are much wider than in the normal conscious state. If, therefore, the field of operation be illuminated by light from which the red and yellow have been largely filtered, the color of the patient is affected accordingly. The writer in the exercise of his duties as expert anaesthetist has frequently suffered much annoyance and anxiety while working under these conditions, as it was impossible to judge the existing degree of oxygenation. A check by ordinary lighting promptly proved and removed the difficulty.

Moreover, it has been suggested that instead of bothering with color on the walls, draperies, etc., why not employ a colored illumination? If this illumination could be restricted exclusively to that which we would color, the suggestion might be entertained, but this is not practical. Artificially colored illumination thrown upon the field of operation would immediately destroy the color value of the tissues, necessitating discontinuance of the operative procedure.

The ideal illumination is therefore one in which the spectrum of daylight is

*"Modern Hospital," June, 1924.

*See *Haemoxometer*, J. of Exp. Med. & Biology.

faithfully duplicated in an intensity corresponding to a North light. This illumination is now available at a cost of installation and maintenance in keeping with the relief which it affords.

COLOR FATIGUE

The problem of color fatigue while of much interest from a physiological point of view, engages our attention in the following practical application:

It will be recalled that white is the presence of all color—the full spectrum; black is the absence of color. Each color making up the spectrum possesses a complementary color, which, when mixed with it, results in a neutral grey, occupying a position between pure white and black.

The eye is constructed on the principle of a camera, light from without entering a small movable diaphragm, the pupil. It passes through a lens, across a chamber of clear fluid and impinges upon a perfectly black tissue surface, the choroid or film. This film surface is crowded with microscopic nerve endings which are sensitive to light and to color. Our exposure to brilliant light results in temporary or complete blindness, snow blindness or sun blindness. Our exposure to color results in color fatigue, or a rapidly diminished ability to appreciate the hue of the color gazed upon.

That normal color vision reacts to the full spectrum may easily be demonstrated by the classical experiment of gazing fixedly upon a red cross and then letting the eye fall upon a white space.

Gradually, a light green cross appears on the plain white surface. What does this mean? It means that the red has burned, as it were, an area of fatigue for green in the film of the eye. When the gaze was dropped to the white space, instead of a record of white, the full spectrum, being made, the red was eliminated by fatigue, leaving as its complementary the balance of the spectrum or green. This experiment further proves that white may be split up into green and red, and that color fatigue for one color intensifies the appreciation of the complement. It may also be interpreted as

proving that after exposure to red the eye chooses green as a color of rest. Scientifically stated, green or any complementary color is the most restful color because it is the only color which does not repeat the original. Upon the operating table this condition is exactly duplicated. The surgeon gazes intently upon a red field of blood; after a time his eyes seek rest from this color fatigue and gaze upon the draperies, walls, etc. If the draperies are white, no relief is obtained for the red of the wound is repeated in the full white spectrum. Green draperies, on the other hand are restful, because green being the complement is the only color which does not repeat the red. A complete rest from red is thereby obtained, and when the operator turns his eye again to the wound, he will be surprised and pleased to discover how the brilliancy of the color of the wound has increased. It may be added that this reaction is thoroughly proven in practice. The problem presented by color fatigue is therefore met, first by determining the actual value of the color bringing about the fatigue, secondly by supplying its true complement. The author claims originality in discovering a means of instrumental measurement of the color of the field of operation. This has been accomplished by the *Oxyhaemoglobinometer*; a clinical measure of the oxygen content of the blood. Having arrived at the mean average color of the field of operation, it was possible to establish the peculiar complementary green called for by the red of this hue. This color has been obtained, is recorded, and available for use. (See color chart, "Full Light.") The problem then of color fatigue has been met with scientific accuracy.

REFLECTION

Having secured the true complementary color to the red of the blood and the tissues, draperies of this color were prepared and employed. It was immediately found that the brilliancy of the color was excessive. This defect brought out the following facts:

Namely, that the addition of white or black to the complementary color has

no effect upon its value as a complement; its hue remains unchanged. On the other hand, its reflective index is susceptible of complete control; the amount of reflection being determined by the amount of white or light permitted. It is therefore possible and perfectly practical to use the definite complementary color prescribed by the author in a range of intensity varying from a bright to a dark hue. The chart illustrates the intensities which have been selected in the preparation of the product *Eyerest Green*. The Full Light color represents the original complementary color. It was found in practice that this color was too dark for walls where a large surface was treated, and too light for draperies about a wound where overhead illumination was intense, and where it was desirable to reduce reflection.

The "Subdued Light" or "Full Light" *Eyerest Green* is recommended for the dado of the operating-room, and for the full walls of corridors, halls, sterilizing room, etc. The enamel is to be used for the wood or metal trim and for the operating-room furniture, operating tables, stools, instrument cabinets, etc. The wall above the dado should be treated in cream, and the ceiling in ivory.

While the task of arriving at the correct hue or color necessary did not present any great difficulty, it was found that fading in full light or sunlight occurred rapidly. Laboratory resources were then brought to bear upon this problem and the result is a preparation which maintains its hue in the presence of direct sunlight.

Draperies for the operating table, instruments, gowns, etc., are made of non-fading muslin, or Indian Head. A long period of experimentation has resulted in the production of fabric, *Eyerest Green*, which closely approximates the darkest color on the chart (enamel), and which is not only sunfast, but fast to repeated steam sterilization. Draperies are still in use showing full color after having been sterilized by steam between forty and fifty times. The use of these draperies affords the greatest possible relief to the color fatigue arising out of

constant gazing into the operative wound. It is especially valuable in nose and throat work, laparotomies, obstetrics, etc.

Tiling, polished, and rubber are being prepared to correspond with the requirements above outlined.

The reader has doubtless observed that there is an inherent aesthetic beauty in the correct interpretation of the natural laws. We see a certain completion and perfection in the architecture of the vegetable world, and in the satisfying symmetry of the anatomical forms of man and beast. It has been pointed out quite recently that the symmetry of living things was more generally understood by the Egyptian girl dancer of Ptolemy's court where angular postures paid tribute to the root 5 rectangle, than it is today. We find the law of dynamic symmetry overshadowing the labors of the past. We find beauty, that which we instinctively grasp as true beauty, crowned and sanctified by law, and some there are who find it difficult to think of a law without a lawgiver. The Sphinx, the Pantheon, are beautiful but dead. The Italian and the Frank not only grasped the law, but acknowledging the Lawgiver, made of their labor a prayer. St. Peter's and Rheims are not only works of exquisite beauty, but they are alive. They are alive and perfumed with the spirit which spent itself in offering as a tribute to the Eternal Lawgiver, the beneficent result of the laws which He had decreed.

It is with no little pleasure then that we find the solution of the application of what we believe to be true laws of physiology and physics to result in what appears to the uninitiated as something beautiful. How restful! What a beautiful color! What a ravishing shade of green! has sprung to the lips of those who instinctively recognized the beautiful without knowing why.

Our claim, therefore, that a solution of the problem of color in the operating-room has been arrived at, is not only established upon recognized laws, but the result, in which beauty is recognized, serves to confirm those laws upon which it is based.

SOME PLATES WITH DIRECTIONS FOR USE

By Japanese Student
Author of Arch's Handy Designer

"Architectural Record"

To Hon. Editor, who must be very sick from trying find out was building publish before.

Revered Sir:

Being Japanese Architect who has gone to school in U. S. and learned how they does it, U. S. seems to be mostly efficiency and standardization except for Hon. Architects who has only standardization. Japanese all efficiency so have wrote a book telling U. S. architect how to be efficient too.

But nobody wants poor Japanese architect's book called "Arch's Handy Designer" showing all standardization plans for buildings mostly alike, copied after plans which best U. S. arch's has copied, and if Hon. Editor would publish some plates with directions for use every body would know right away he needs this book and I would make much more money every week as now in office drawing sweeping and etc.

Jap architect author has already buy library now used by U. S. arch's, this being by hon. Italian gent named Vignola; and "Arch's Handy Designer" is made to take place of all pictures cut out of magazines where now U. S. arch. finds designs, so U. S. arch. can now get design out of "Arch's Handy Designer" and choose columns out of Vignola like al-

ways, and be just as original as now.

This book is most good for Hon. Arch. because

1st, He does not have to spend more money buying books hoping for new pictures to use for original designs.

2nd, He saves tracing paper because all pictures in "Arch's Handy designer" is made to cut out and fold up on dotted lines to show how different originalities looks. Maybe better buy extra book to cut up.

3rd, Hon. Arch has all standard designs in one little cheap book and can design in one minute (1 min.) what now takes every body two hours (2 hrs.) and some very good arch's so much as two or three days (2-3 d'ys).

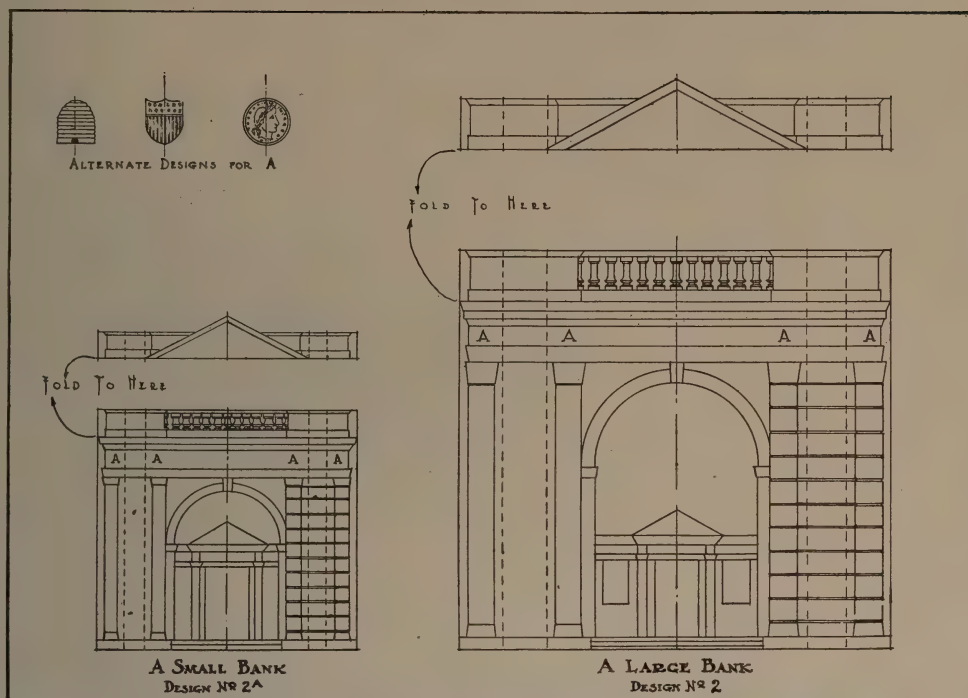
4th, Jap arch. tell with every picture how to use him so U. S. arch. can be original and not make bad design.

Now Hon. Ed. this very good for you too because every month you spend much money make plates and text which use pages where advertisem't could go, but after book is sold you dont make no more plates, just tell where building is built, which design from book is use, what page in Vignola book gives col's, and tell about materials in adv. page where somebody pays for chance to do it.

JAPANESE STUDENT

THE ARCHITECTURAL RECORD.

FOR BANKS



FOR A LARGE BANK ON A MONUMENTAL SITE

Instructions for Using Design No. 2

For narrow lot use order like corinthian for wide lot use doric.
Columns can be squeezed together to dotted lines for narrower lot
or outside column can be left out for narrowest lot.

For saving bank use rusticated cols.

On frieze use only appropriate ornaments suchlike:

for saving bank use Bee Hives.

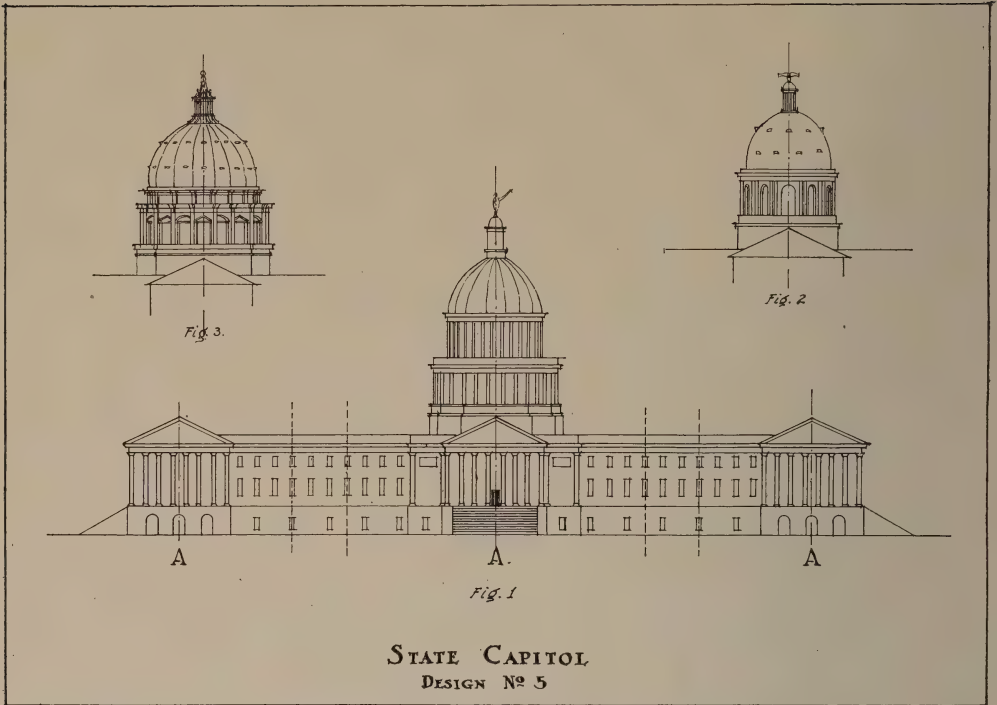
for Nat'l Bank use U. S. shield.

for trust company use money because money means Confidence and Confidence=Trust

FOR A SMALL BANK ON A PICTURESQUE SITE

Instructions for Using Design No. 2a

All instructions like design No. 2.



Instructions for Using Design No. 5

This design is used for all Good state capitals and fits every plan

Axle lines A.A.A. should be on street centers; if they don't fit make capital bigger or change streets. It is mostly better to change streets because

If grade is not level it must be graded up or down anyway. This is done by all best U. S. architects.

Three kinds of domes is given so population can feel at home; Fig 1 (St Pauls) for english populated, Fig 2 (Frauenkirche) for German populated, Fig 3 for Italian populated.

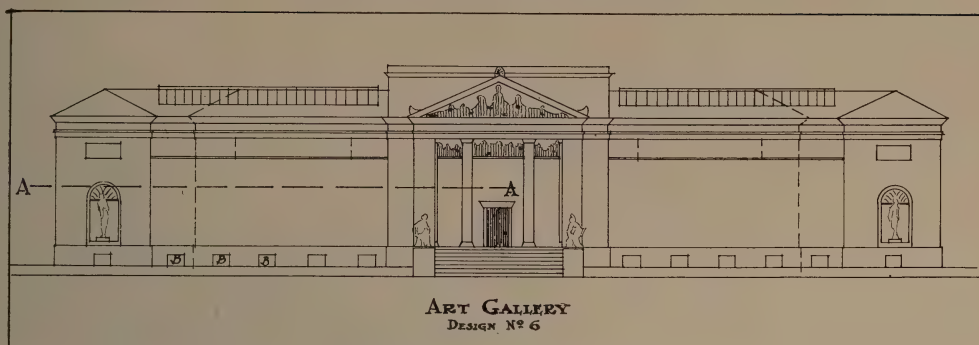
No Japanese domes is given except for California by private letter to author (Very private letter requested)

Original architect uses Corinthian Grec column number L in Vignola book. Very original uses Mr. Palladio column but this is not conservative.

To make state capital more grand use more steps.

THE ARCHITECTURAL RECORD.

FOR A UPTO DATE ART GALLERY



Instructions for Using Design No. 6

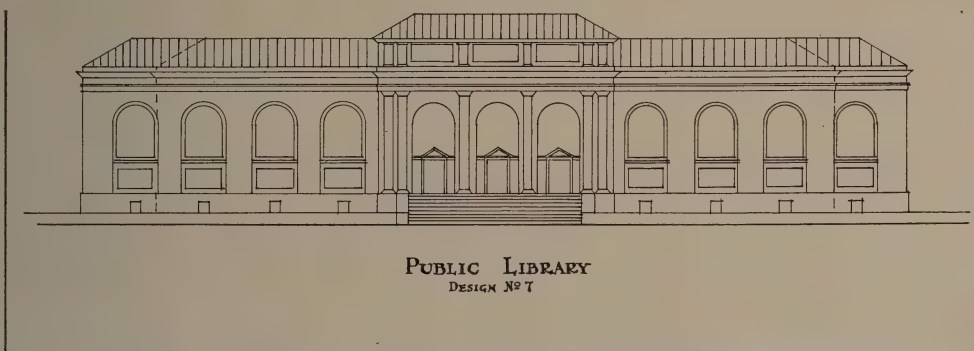
If built in cool climate so some ventilation must be in boiling room, put heating coal sculpture and etc. in cellar. Use windows B.

All upper part can be in one high room light by skylight, or dark story can be put in on line A-A for cubical pictures if museum has some.

For columns use grec only in back of Vignola book.

For frieze put in from Parthenon; can get where advertising page says.

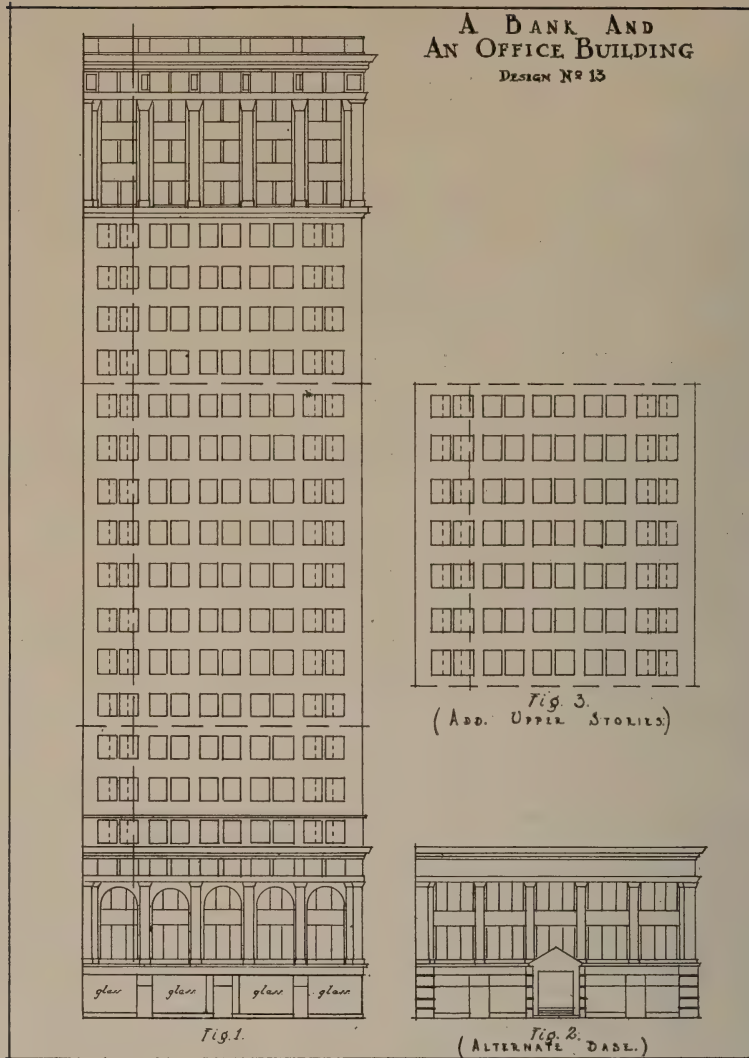
FOR A HIGHLY STANDARD PUBLIC LIBRARY



Instructions for Using Design No. 7

Cut off ends if needed. No other instructions; every U. S. Arch. knows how to make this library.

FOR AN EXPENSIVE BANK AND AN OFFICE BUILDING



Instructions for Using Design No. 13

This is very Standard Design.

To find out how many stories look, fold on dotted lines to make lower or cut apart and stick in some stories; Fig. 3 gives quite a lot.

To make wider, you cannot do it without more drawings but it is wide enough.

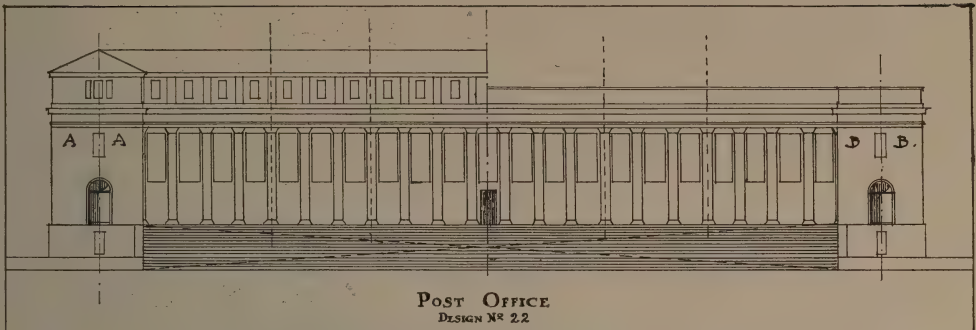
If U. S. cigar stores is to be on ground floor use Fig 1.

If bank is on ground floor use very strong looking base Fig 2; with base Fig 2 should be only one window above on corners like dotted lines; except when Realtor objects; so use two mostly. That is why one is dotted.

For materials use ad. pages of Hon. Arch. Rec.

THE ARCHITECTURAL RECORD.

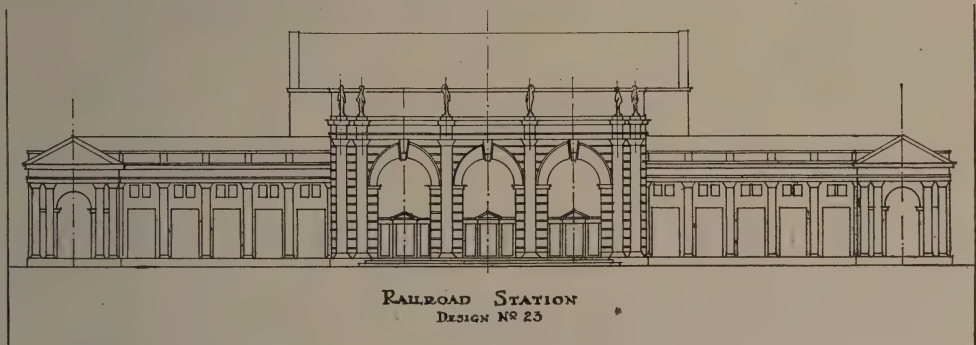
FOR A FINE POST OFFICE ON A SLOPPING OR LEVEL SITE



Instructions for Using Design No. 22

To make more Expensive use more steps.
 To make less Expensive cannot do.
 If lot is narrower fold up anywhere.
 For slopping lot cut off steps on one side like dotted lines.
 At A and B put in names of celebrated Postmen.
 For short building use Inscription in Frieze
 "The more haste the less speed"
 For long building use long Inscription like
 "Words were made to conceal thoughts"

FOR A RAILROAD STATION (TERMINAL, UNION, OR WAY)



Instructions for Using Design No. 23

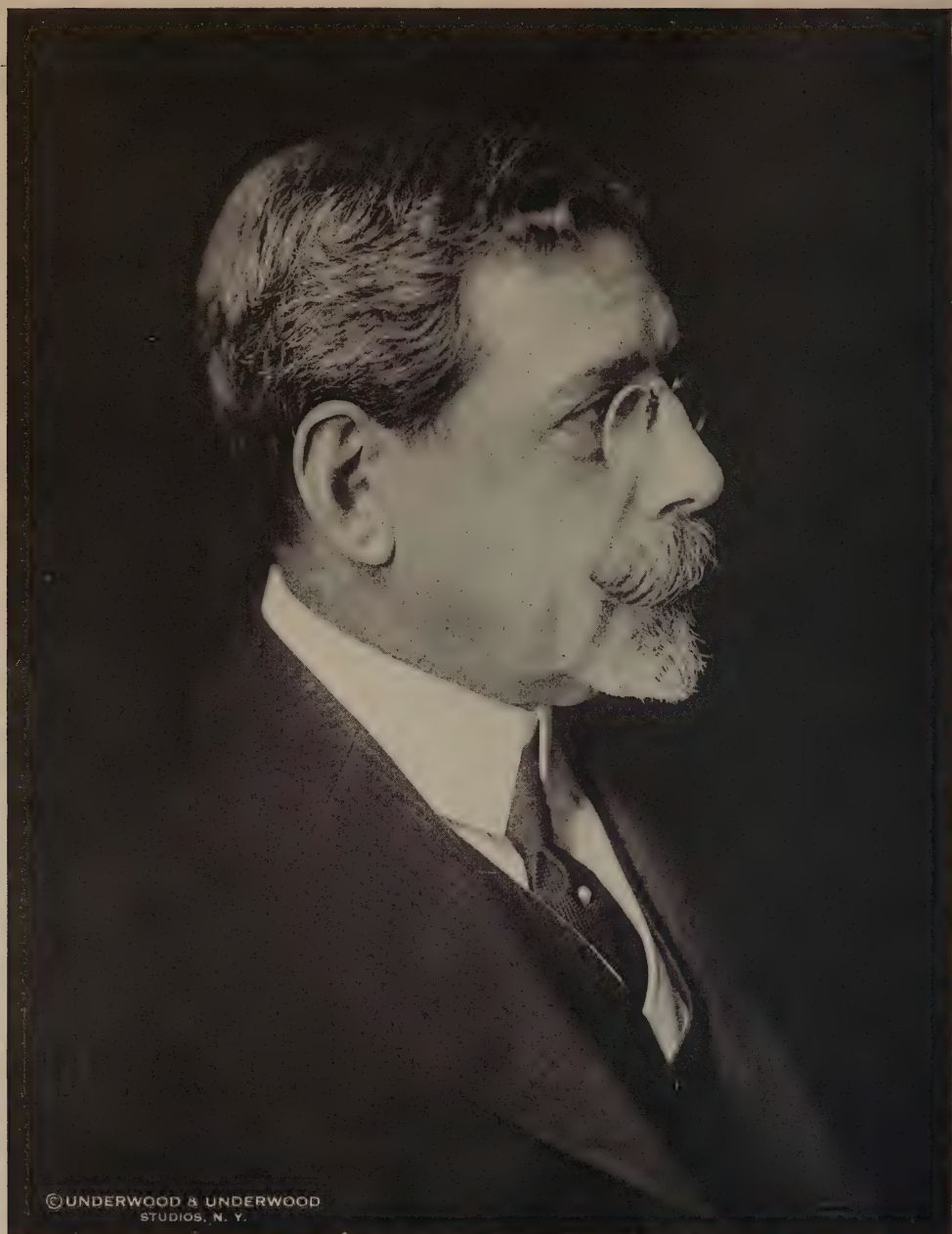
This design comes from Roman Baths very appropriate to Railroad Stations because most R. R. Travelers need Baths after getting off U. S. trains.

For Small Station leave out ends.

For Cheap Station leave out middle.

For Big Station use like drawn.

For single track R. R's put axle line on middle of track.



ARNOLD W. BRUNNER
(1857-1925)

IN APPRECIATION OF ARNOLD W. BRUNNER.

(1857-1925)

I OFTEN WONDER if the older professional man who has attained a high level of accomplishment realizes the spirit in which the youth whose career has just begun to unfold looks upon him at first meeting.

The complexes of youth are very lasting. No age is more impressionable than that between twenty and thirty. The young man is then fresh for impressions, with all his tentacles out, so to speak, ready to grasp at every new and interesting phase of life. I was at exactly that impressionable age when I first met Arnold Brunner, and I have never lost the sense of his personal charm, vitality, and interest, nor of the power among men which he possessed to a marked degree. He had then, and he possessed to the end, the spirit of eternal youth. His interest in men and life as he met it and his enthusiasm never flagged.

It is a good many years ago that I first met Mr. Brunner—twenty-two, to be exact. I had happened to meet on a street here in New York, a former élève of the Paris school, and he asked me: "Want to work on a competition?" I accepted with alacrity. Such an invitation to a young man fresh from the Ecole was like a dinner invitation to a hungry tramp. We then went to the top of an office building on Union Square, then the "up-town" center of those far-strung architects who were pioneers in the movement of getting their offices away from Wall Street. It was there I met Arnold Brunner.

I do not remember now what the subject of the competition was, how long I worked on it, nor whether we were successful. But I have never forgotten my first impression upon meeting this man who was a dominating factor in the architectural world, who stood with the few, the very few leaders of the day, a man known to every aspiring young draughtsman as somebody well worth while, someone you might well envy the other fellow's knowing.

Arnold Brunner retained the quick perceptions and reactions of youth. Of course one sensed the subtle personal force of the man that could appear before any gathering and carry his point, and his vision for great undertakings. Yet there could be no feeling that he dominated by any force other than that of intelligence. And with it all there was in him a certain indefinable charm which one felt at once and always perceived. It was, perhaps, Arnold Brunner's most surprising characteristic. Every man who met him carried away this same delightful impression, and his friends were only limited by his capacity to meet people. These he retained always.

It is hardly necessary for me to enumerate his many and varied professional activities. His standards were of the highest. His code of ethics was that of the gentleman, the simple, natural instinct of fair play and courtesy.

Of course, that rare combination of vision, charm and the ability to think and speak clearly before his fellows, soon impelled him into a larger field of architectural activity. Governmental, institutional and city planning work commanded much of his effort. Many cities throughout the United States are benefiting today because of his vision, determination, and ability to put across his ideas—ideas that were in advance of the time and not fully appreciated when first promulgated. The great Post Office and Civic Center of Cleveland is perhaps his most conspicuous effort, but the plan, layout, and building of the great Mt. Sinai Hospital, the winning of the competition for the Department of State in Washington, the development of the accessory buildings and surroundings of Harrisburg Capitol were only a few of his many activities.

Naturally so fine a personality would be an important one among the professional group. No man was more ready and willing to give of his time, energy and exceptional executive ability to the

service of his chosen profession. A past president of the New York Chapter of the American Institute of Architects, a past president of the Architectural League, president of the Fine Arts Federation and numerous other activities along similar lines enjoyed his unstinted effort and enthusiasm.

In a city like New York—there are no other cities really like New York—we find ourselves more or less closely allied with certain of our professional brothers when some mutual professional interest brings us together. Then long periods may intervene when we scarcely meet, although our offices may be in the same neighborhood, our desires the same, and even our social relations similar. It is the penalty one pays for living in a great city. When Arnold Brunner was president of the New York Chapter of the American Institute of Architects I had committee work under him. But after that only an occasional interest brought us together until recently when we hap-

pened to find ourselves members of the same group of co-operating architects for the Plan of New York and its Environs. We had quite a bit of work together. I was personally very happy at the opportunity which it gave me to see more of him.

Again I had this very vivid impression of him. Arnold Brunner seemed to be one of those men who had drunk at the Fountain of Eternal Youth. Hardly a grey hair had been added to his always luxuriant growth. There was not a scintilla of evidence of slowing down; in fact, not a sign of growing old. And best of all, a mind more open to new ideas, more ready to grasp new conceptions, quicker to suggest new solutions than many a younger man.

Arnold Brunner was always a young man at heart, and retained to the end his keen appreciation of his friends, his work, and humanity.

HARVEY WILEY CORBETT



View of Hill with Approach
DENISON UNIVERSITY, GRANVILLE, OHIO
Arnold W. Brunner, Architect

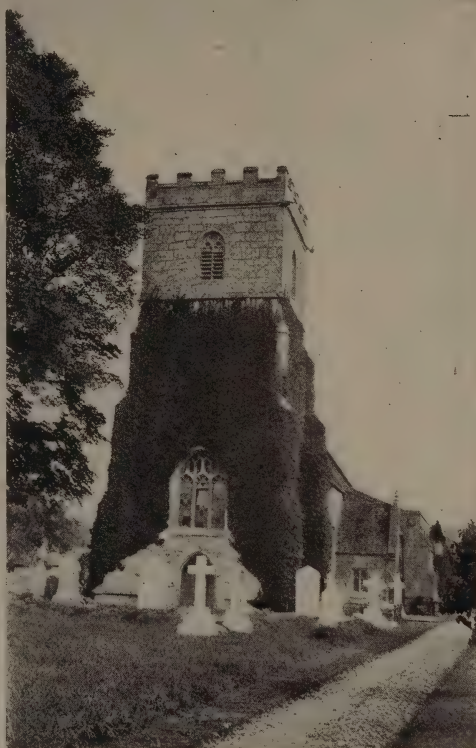
— The — ENGLISH PARISH CHURCH AND ITS DETAILS

By
Robert M Blackall

Measured Drawings and Photographs by the Author

LYCH GATE AT MIDDLE WOOLFORD, WILTSHIRE, ENGLAND

This gate is typical of the small entrance ways—lych gates, as they are called—to the church close which one frequently sees in the English countryside. The close in which the church stands is surrounded by a wall, at the openings of which these little gateways are placed, through which the people pass on their way to church. Usually they are of half timber, with a sloping roof, and sometimes a seat is provided where one may wait for a friend before going into the church. Very few of these old lych gates remain, and they are fast being rebuilt. Since the World War they are being erected as memorials to the men of the parish who did not return. Their construction is simple, with little or no ornamentation, and they are usually covered with a slate or field stone roof. They blend well with their surroundings and are in keeping with the church. The general dimensions of this lych gate are about 9'-3" by 10'-0", which is the usual size for these gateways.



CHURCH AT MIDDLE WOOLFORD,
WILTSHIRE, ENGLAND

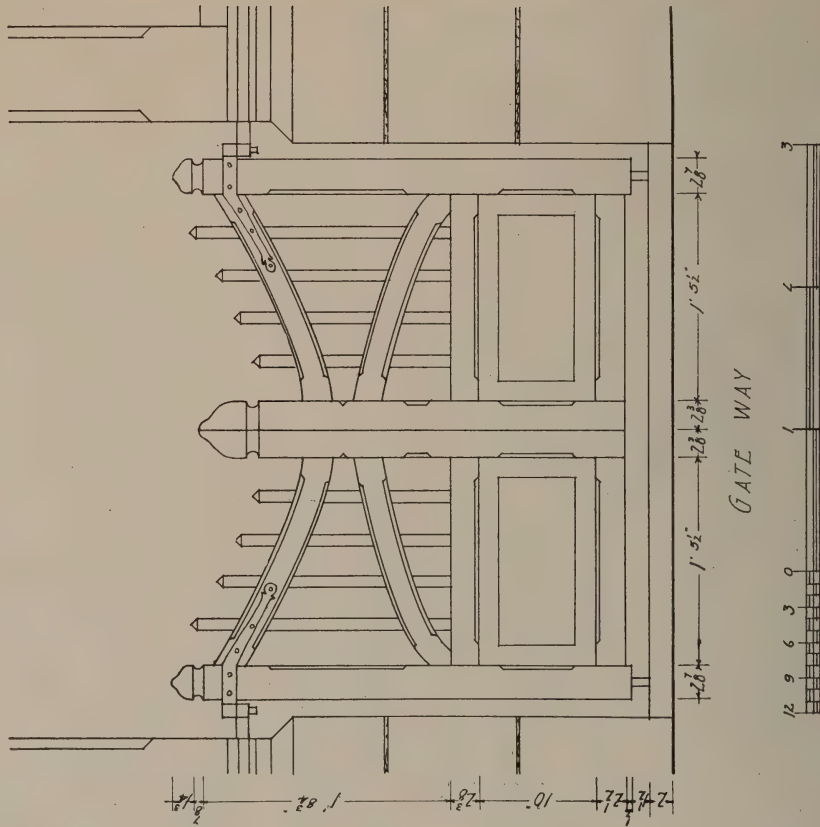
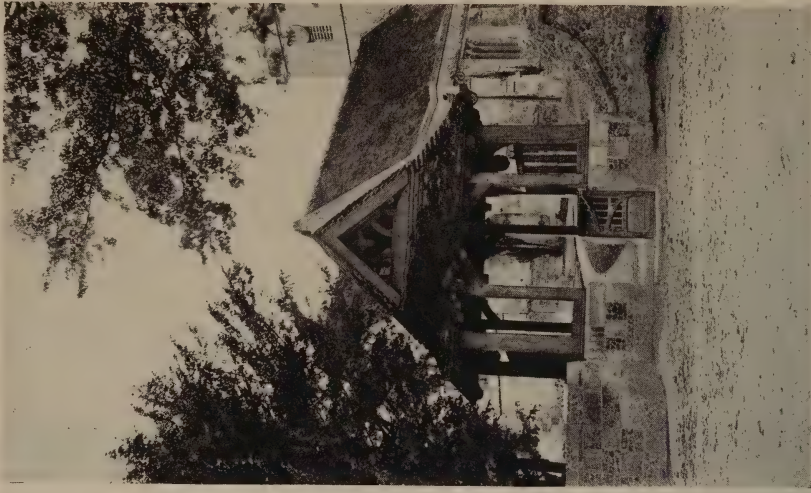
LYCH GATE AT PAINSWICK, GLOUCESTERSHIRE, ENGLAND

In the towns and villages of rural England the lych gate, which breaks the monotony of the fence or wall surrounding the church close, may be either a simple iron gate, or a gate house beside the home of the keeper of the close, or (as in the case of Salisbury Cathedral) a gateway beside the home of the Dean of the Cathedral. In the smaller churches, such as the Parish Churches, it may be simply an archway, built in half timber as a memorial. The lych gate as a memorial, however, is but a modern idea, for in the thirteenth and fourteenth centuries these gateways were built, as in the case of this gate at Painswick, simply as an entrance way to the church.

On the outside of the gate certain quotations from the Bible are carved, and over

the entrance way is a room which adjoins the home of the lodge keeper or custodian of the church.

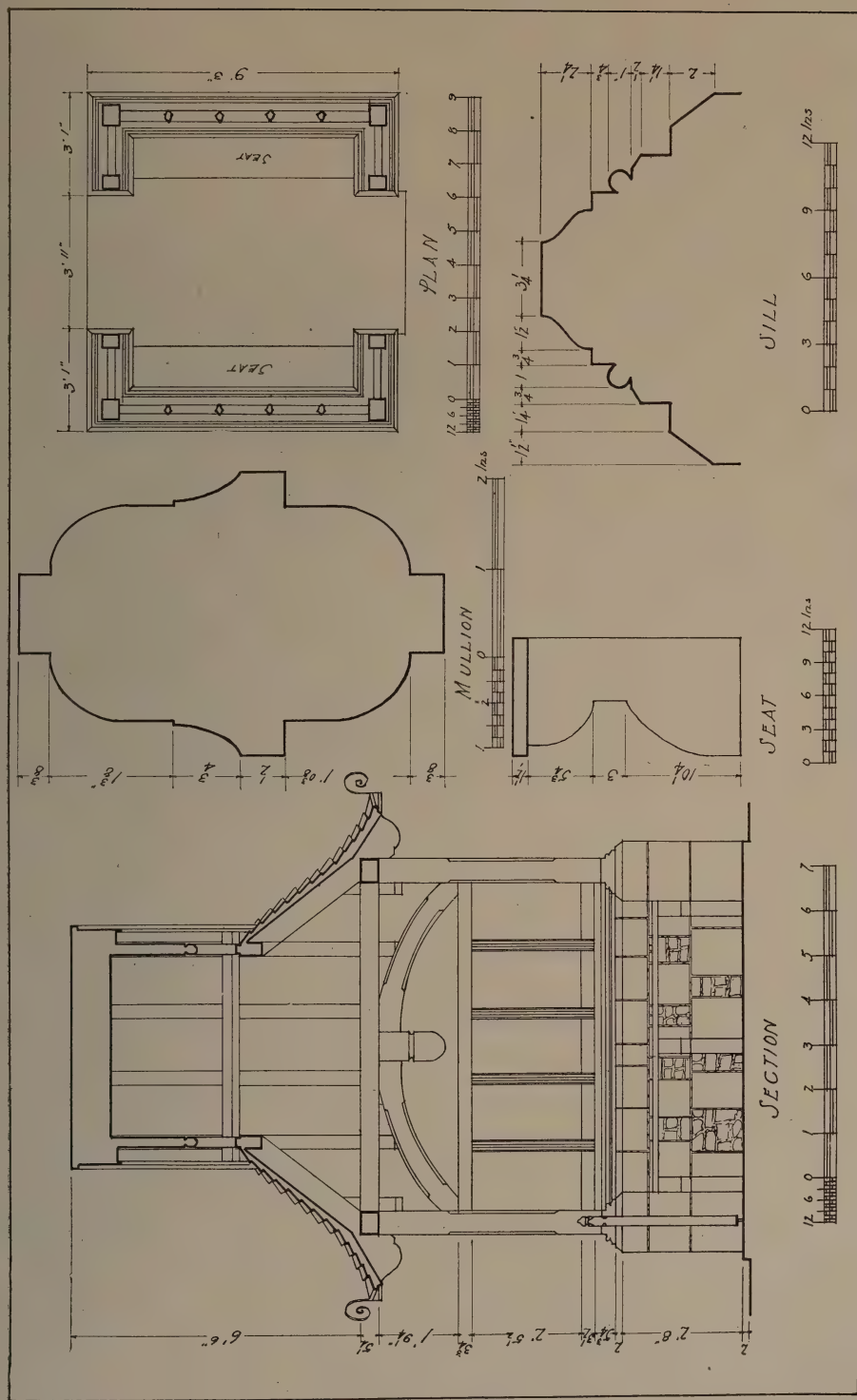
The lych gate is built of half timber and plaster, set on a concrete or sometimes on a

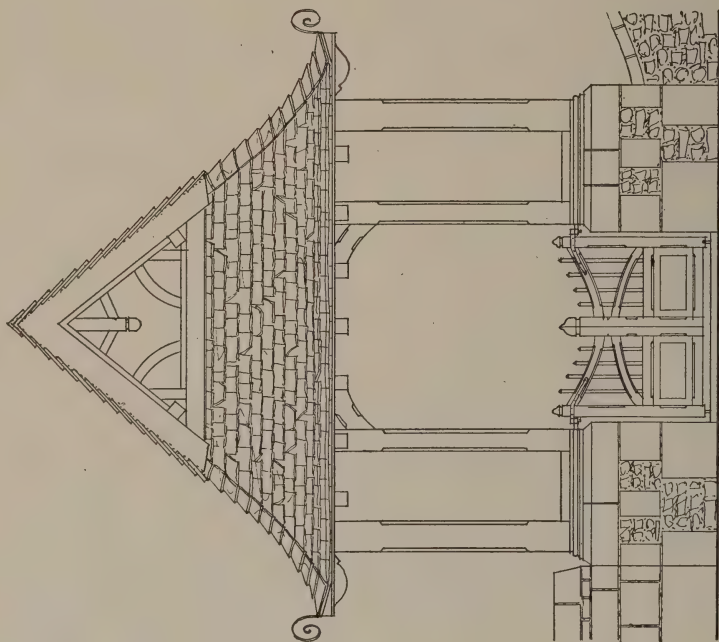


Lych Gate
CHURCH AT MIDDLE WOOLFORD, WILTSHIRE, ENGLAND
Measured and Drawn by Robert M. Blackall

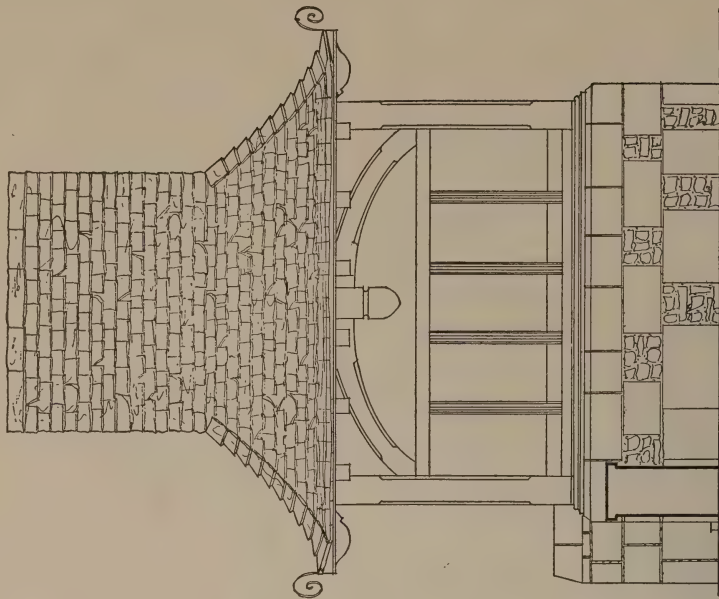
The Architectural Record

May, 1925





FRONT ELEVATION

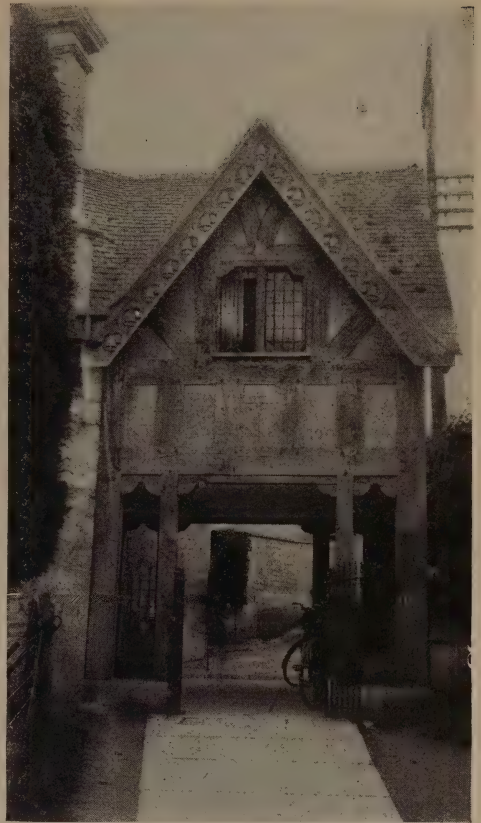


SIDE ELEVATION





Front View of Lych Gate



Side View of Lych Gate

CHURCH AT PAINSWICK, GLOUCESTERSHIRE, ENGLAND

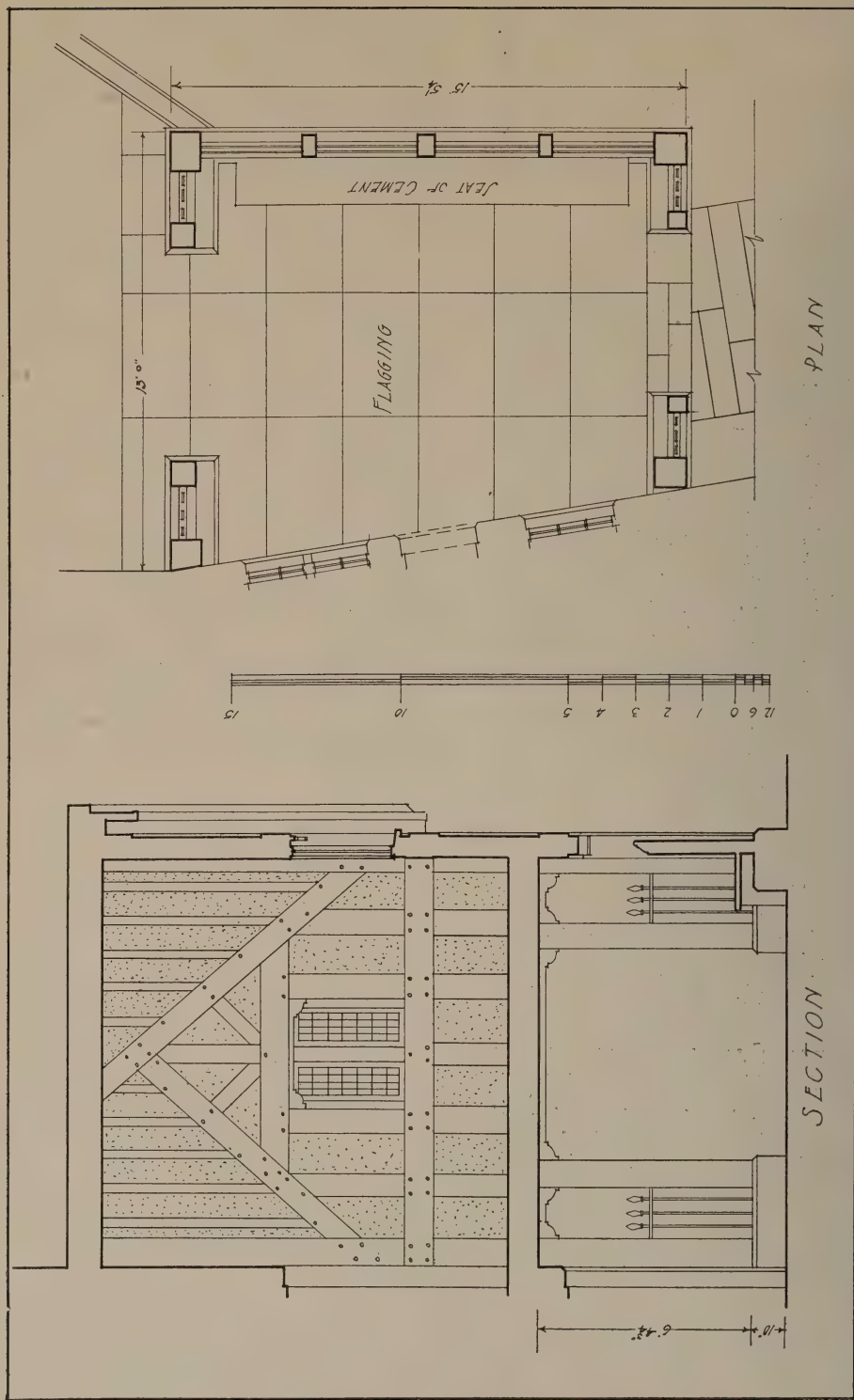
stone base. The seat provided is of cement in this case, though generally one finds seats made of wood. The small windows in the upper room are of leaded glass, the dimension of the glass being approximately $2\frac{1}{2}'' \times 5\frac{1}{2}''$, with a small bit of carving in the upper corners.

LYCH GATE AT LONG MARSTON, WARWICKSHIRE, ENGLAND

This lych gate has been built since the war as a memorial to the men who left Long Marston and went to France. It shows how

modern work can be built after the style of the old half timber. The work is perfectly sincere, that is, the half timber is real half timber, and it has been framed and pegged, after the manner of the old work.

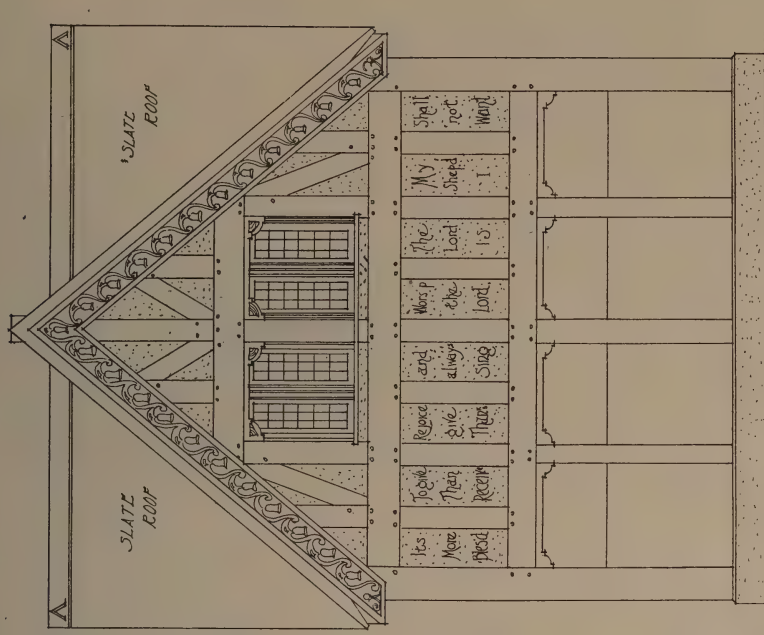
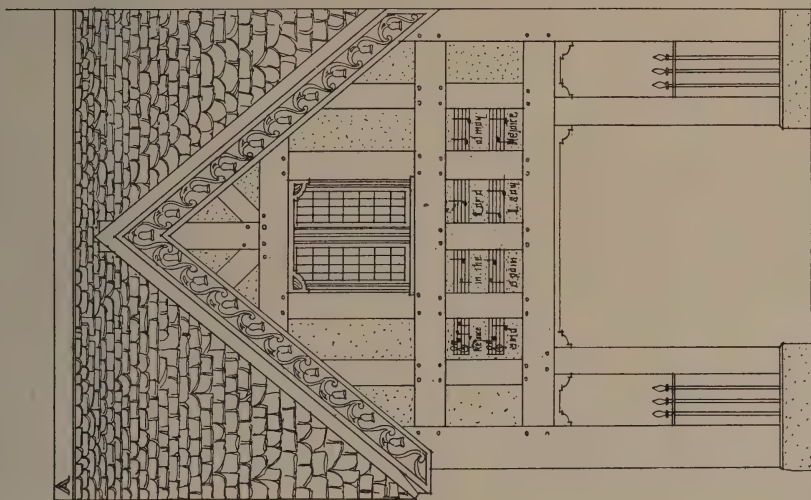
Although modern, it has the true spirit of the old work and compares very favorably with the fourteenth and fifteenth century lych gates found in England. The floor is paved with brick. There is no seat in the inside. The material used is half timber oak, with cement plaster to fill the spaces between the half timber.



May, 1925

Lych Gate
 CHURCH AT PAINSWICK, GLOUCESTERSHIRE, ENGLAND
 Measured and Drawn by Robert M. Blackall

The Architectural Record



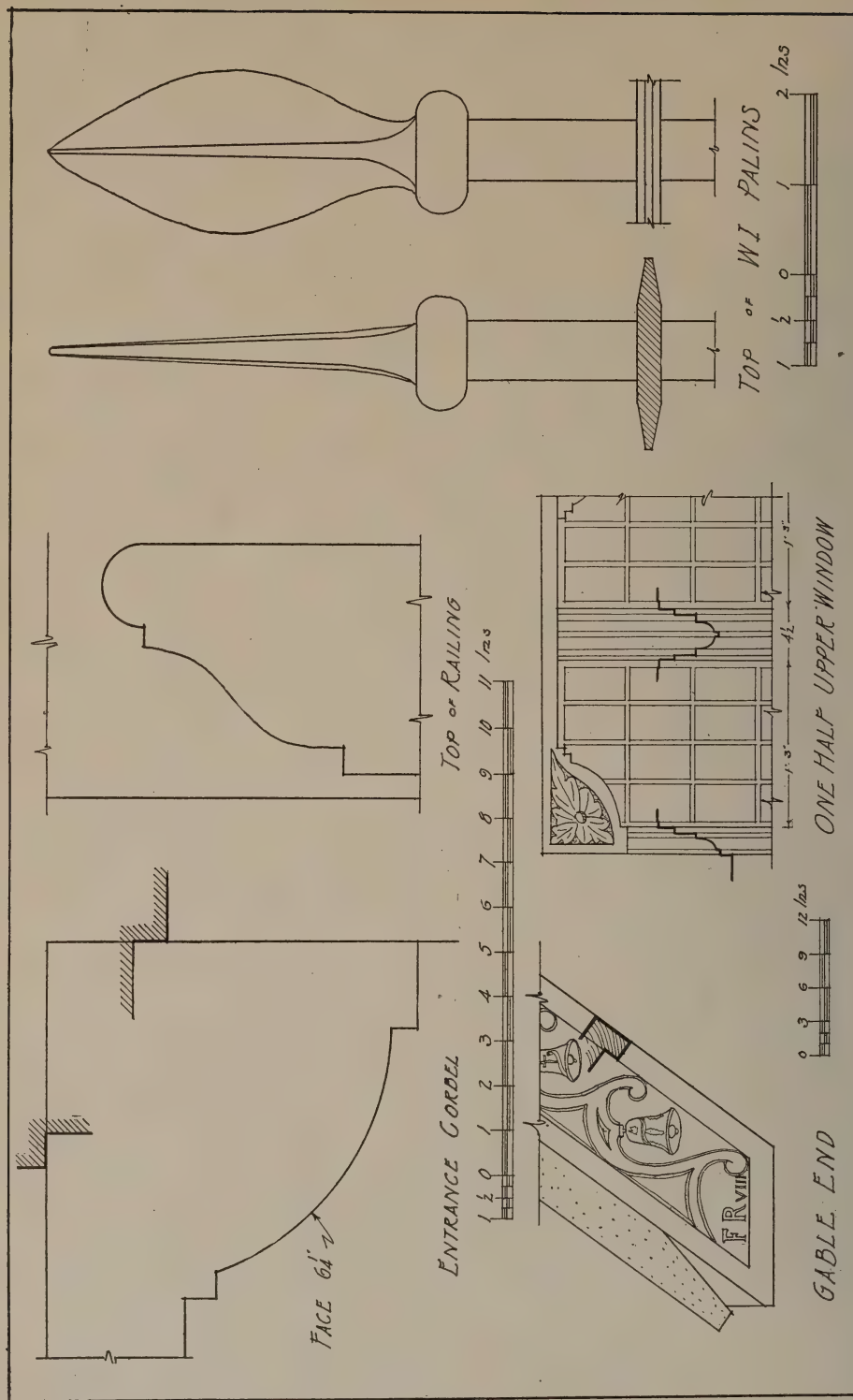
The Architectural Record

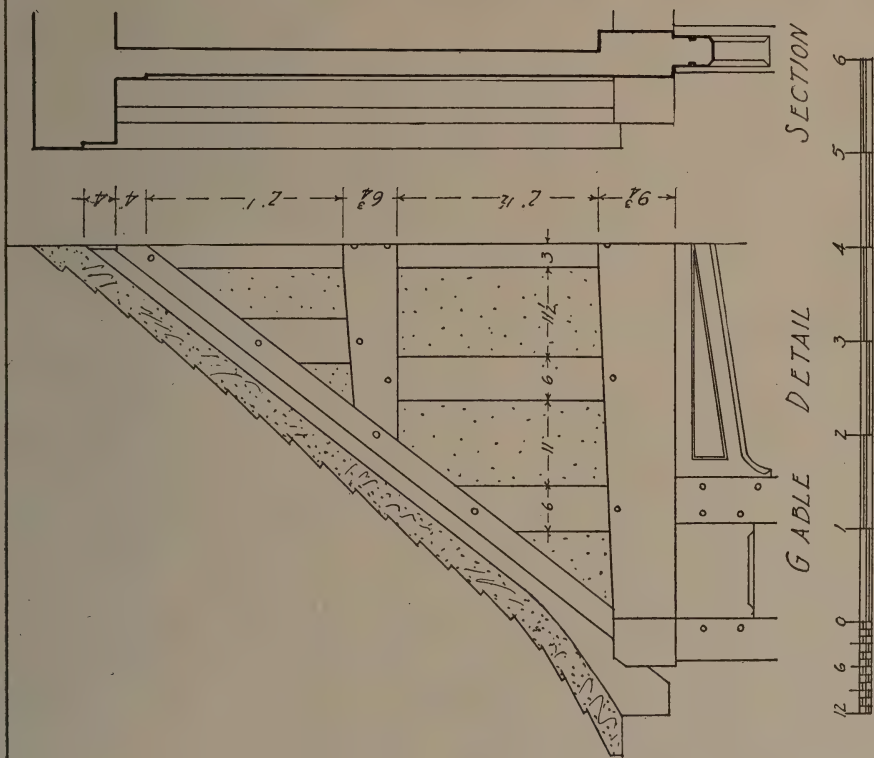
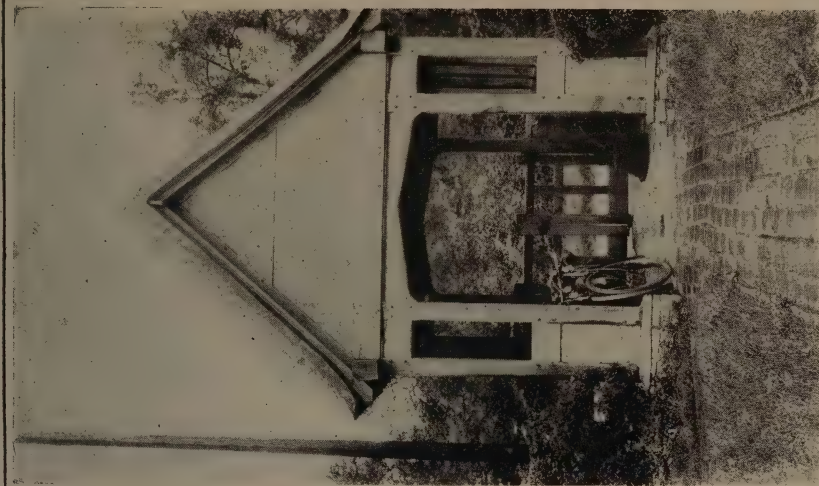
Lych Gate

CHURCH AT PAINSWICK, GLOUCESTERSHIRE, ENGLAND

Measured and Drawn by Robert M. Blackall

May, 1925

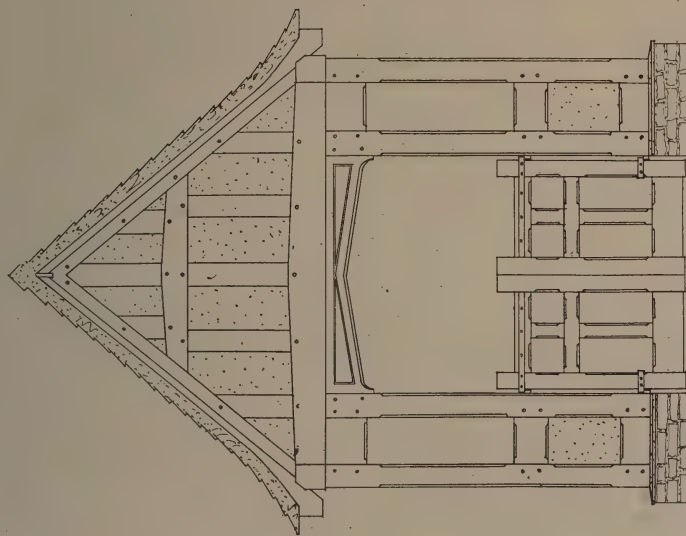




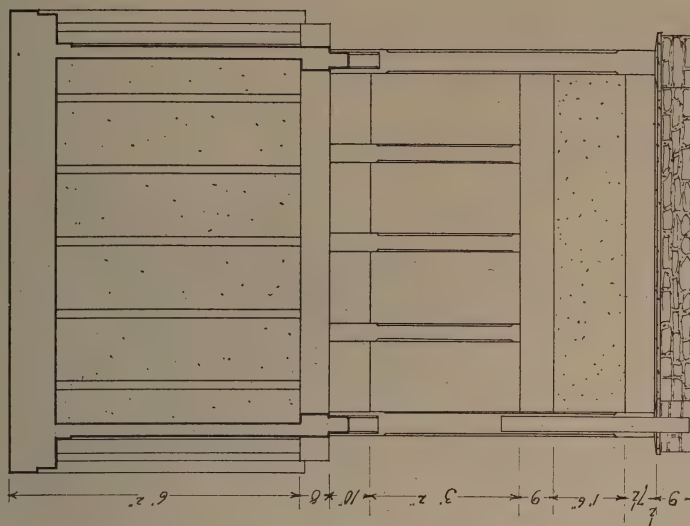
The Architectural Record

Lych Gate
 CHURCH AT LONG MARSTON, WARWICKSHIRE, ENGLAND
 Measured and Drawn by Robert M. Blackall

May, 1925



ELEVATION



SECTION





THE NEW ADMINISTRATION CENTER PLAN FOR LOS ANGELES

Los Angeles is keenly alive to the need for beauty in her public buildings, to the necessity for public parks and the restoration of her historic structures.

The Allied Architects' Association of this city recently submitted to her public officials plans which, if realized, will make Los Angeles the proud possessor of specimens of civic architecture comparable with some of the best in our great cities.

According to these plans the present slum section of the city, known as the Bunker Hill district (the deteriorated residence section of its early commercial prosperity) will become a vast park (Las Alturas). This will be intersected by a Mall nearly a mile long skirted on each side by buildings of a semi-public character. Roadways for pleasure vehicles will encircle this park, the heavy trucking traffic being diverted through tunnels cut under the hill.

Further, the administration buildings of the federal, state, county and municipal governments will be grouped around a great plaza, east of Las Alturas and easily accessible to county and city alike.

The historic Plaza and the Mission Church will remain unchanged and new buildings to be erected facing the Plaza will be of a type in keeping with the old world atmosphere of this section of the city.

The Allied Architects' Association of Los Angeles which comprises seventy of the most prominent architects of Southern California, was formed in 1921, and its aims, as stated in its by-laws, are "to advance the art of architecture, and by professional cooperation of all its members to secure for and provide municipal, county, state and national governments with the highest and best expression of the art of architecture in the designing, planning and construction of pub-

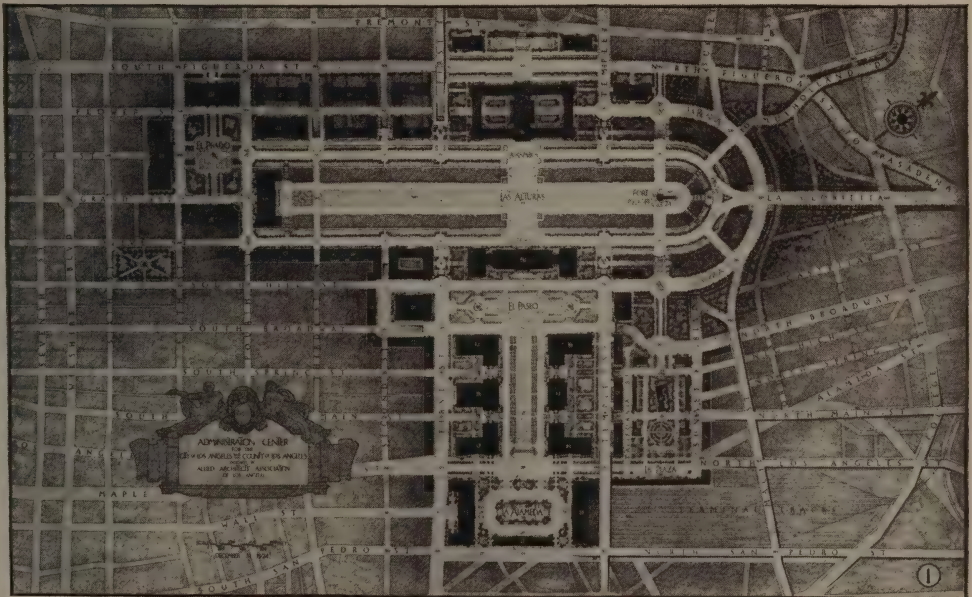
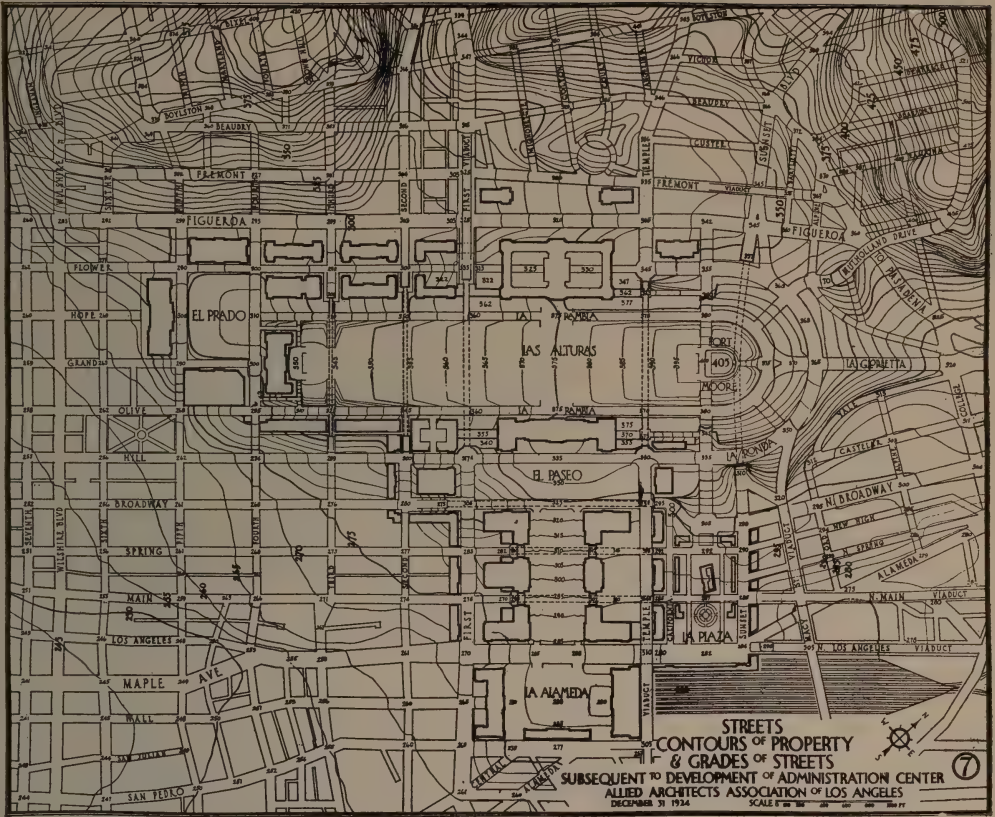
lic buildings, structures and improvements, at the least possible cost."

In drawing up plans for the new Civic Center, the Association had undertaken a difficult task; many months of consideration, study, discussion with public officials were involved. If these plans are accepted, the new center will stand a perpetual monument to the courage shown by a public-spirited body of men in their endeavor to elevate civic architecture.

THE FINANCIAL VALUE OF A CONCEPT

It would be difficult to define the precise difference between a forecast and a prophesy; many will admit the validity of the former as involving wise precaution, who would spurn the latter with contumely. At the present time an intelligent and unbiased observation of controlling influences of an abstract nature is essential, in view of the astoundingly rapid growth of architectural activity during the last ten years, and the enhancement of quality in effort. This expansion affecting the higher phases of architectural design is not due to the demands of prosperity or the law of supply and demand—though after the period of enforced inactivity in war-time, those factors in production were naturally responsible for the majority of enterprises in building—but the purpose of structure and the character of architectural expression are attributable in many important examples to powerful abstract forces. Though we recognize the futility of prophesy in mundane matters, we have created a synthetic equivalent in the formulation of deductions procured through an analysis of impulses responsible for architectural schemes identified with the higher order of social requirements.

The colossal success attending the present financing of the Episcopal Cathedral of



New York is very enlightening. For some time past we have been aware of a tendency in the American people towards a Cult of the Monumental which rapidly approaches the state of a national obsession. This does not originate in that post-bellum enthusiasm which so rapidly petered out in our townships large and small, but in the consciousness that Colonial standards are outgrown, and if broader ideals are to flourish and mature they must be typified monumentally. In all the major activities of American life we note the aim to give structural expression to concepts, be they of Civic Government, Education, Finance or Commerce; the Fact is made to give precedence to the Concept in design. This signifies that, unconsciously and spontaneously, a great educational movement is under way, which will result in the transformation of our materialism into a capacity to think of mundane factors in abstract terms. As soon as the inhabitants of New York were informed that the Concept of Religion had no worthy shrine dedicated especially to that ideal, (or, to use the words of the slogan, no "House of Prayer for the People"), they showed their sympathy with the monumental expression of an idea by an avalanche of donations from individuals of all creeds and races. The project of a Cathedral is over twenty years old, and proved so deficient in appeal in its original form of presentation that the building commenced has been derelict for a decade through lack of funds. With brilliant psychology and profound knowledge of this unrecognized sympathy with monumental expression of the altruistic, the old subject was revitalized, and an idea sold to the public for the sum of fifteen millions of dollars. Already eight millions have been invested in this ideal in practically as many weeks, with good prospect of the balance being subscribed before the year is out. The incongruity of a House of Prayer presumably for all denominations, under the exclusive administration of the Episcopalian Church, has apparently been passed over for the present, and we can only assume that a higher value is placed upon the monumental demonstration of the idea than upon the practicability of its application.

For the future of Architecture in America this bodes well, not merely from the human experience that we are more apt to be liberal in subsidizing our enthusiasm than in trading money for recognized values, but for the knowledge of the premium which is placed upon the structural statement of ideals. The inspirational content of a problem in-

volving the architectonic statement of any great humanitarian concept is bound to stimulate imaginative effort to an unparalleled extent, as the successful solution must be so simple in its grandeur as to compel comprehension in the masses. It means the advent of a new order of poetry in architectonic idea, revealing the sublime in mass and proportion. This great popular movement resembles all its predecessors in the history of the art; they invariably spring from some social source and establish their characteristics before contemporary sensibility fully records their direction or significance. A timely recognition of such movements fosters the gaining of impetus, and fixes the objective clearly in the imagination of artistic creators.

LEON V. SOLON.

MISSION SAN JOSÉ DE TUMACACORI, NEAR TUBAC, ARIZONA

A score or more of miles north of the Mexican border the road from Nogales to Tucson passes the ruins of one of the few Spanish missions in Arizona that possessed architectural merit. San José de Tumacacori was erected late in the eighteenth century at about the same time as the more pretentious Mission San Xavier near Tucson; in fact, tradition says that the same builders were in charge of both undertakings, work being carried on at one, while the plaster was "curing" at the other.

The walls were built of adobe brick, part of which were baked while the rest were merely sun dried. The construction is excellent, the vault, arch and dome being handled with surprising skill. The vaulted roof of the nave has fallen, but the beautiful dome with its surmounting lantern still remains.

The ornamental façade, which was well preserved as late as 1880, is now practically ruined, remnants only of its engaged columns and mouldings remaining to indicate its former enrichment, while the semi-circular pediment which originally crowned it has disappeared with the vaulting.

A circular mortuary chapel stands at the rear of the church, and other structures are to be found in varying stages of decay.

The buildings at San Xavier were reclaimed in time to preserve them in all their beauty for the future, but Tumacacori has been less fortunate. The work of disintegration has progressed rapidly. The protecting coat of plaster has disappeared to a large extent and it is only because of the absence of frost and heavy rainfall that anything but a heap of mud remains.



View from Southwest
MISSION SAN JOSÉ DE TUMACACORI, TUBAC, ARIZONA



Mortuary Chapel and Rear of Church
MISSION SAN JOSÉ DE TUMACACORI, TUBAC, ARIZONA



Detail of Front
MISSION SAN JOSÉ DE TUMACACORI,
TUBAC, ARIZONA

Somewhat tardy steps have at last been taken to prevent further destruction and the buildings have been placed under official care, so that two at least of the Arizona missions will be preserved as monuments to the architectural skill of the Spanish padres who first brought Christianity to the dwellers in the great deserts of the southwest.

I. T. FRARY

Note—For some of the historical data the writer is indebted to "Mission Architecture as Exemplified in San Xavier del Bac" by Prent Duell.

THE INTERNATIONAL CONGRESS FOR CITY IMPROVEMENT AT PARIS, FRANCE

The International Congress for City Improvement announces its third session to be held at Paris, France, from September 28 to October 4, 1925.

Its first session met at Ghent in 1913 when it was arranged to hold a similar meeting at Paris in 1916. Fate, in the shape of the World War, ruled otherwise and it was not until 1924 that the second session met, Am-

sterdam being chosen as the place of Congress.

So successful was last year's meeting that it was decided to invite delegates representing all the municipalities of the world to a conference at Paris in 1925.

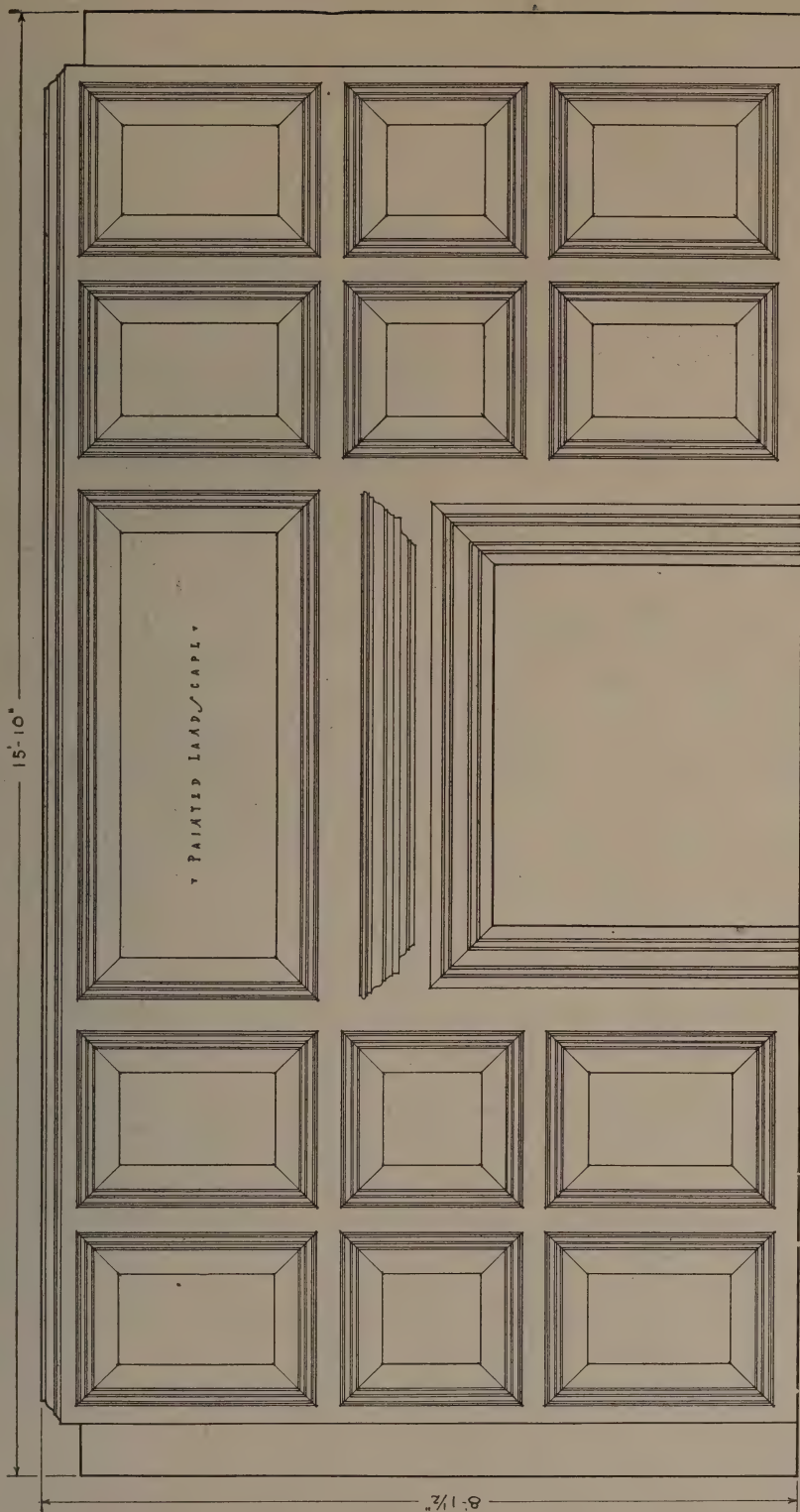
The reasons of its being and the aims of the Congress, briefly stated, are as follows: The rapid growth of cities during the past century and the fact that the city has become the center of all modern activity—trade, education, recreation—has rendered necessary the formation of institutions and services for the benefit of the individual. Again, the general progress of civilization and advance made by nations hitherto backward, have brought administrators of municipal affairs face to face with problems previously unknown. The successful organization of civic institutions or the successful solution of a civic problem in the case of one city may be of incalculable benefit in the case of other cities, hence earnest discussion of such matters among those in control of municipal affairs is bound to prove of value to the human race at large. A systematic study of city problems and the best way to meet them is to be the keynote of the Congress at Paris.

The ARCHITECT'S LIBRARY

EARLY DOMESTIC ARCHITECTURE OF CONNECTICUT

By J. FREDERICK KELLY. Yale University Press, New Haven. \$15.

The appearance of this new book, "Early Domestic Architecture of Connecticut," by J. Frederick Kelly, is fortunately timed with the widespread intensification of interest in American Architecture. Within the last few years local museums have been established all through the Eastern States and the older ones have been rearranged. Among others that have collections of great interest are the old Gaol, at York, Maine, the Deerfield Museum, the Lorenzo de Medici Sweat House, at Portland; the Hartford Athenaeum; the Council Hall at Kingston on the Hudson; the Wayside Inn, but recently endowed, and the new Early American Wing of the Metropolitan Museum in New York. From my own observation, I should say that this wing, at



PANELLING IN THE PARLOR CHAMBER OF THE WELLES HOUSE IN LEBANON
(Illustration from "Early Domestic Architecture of Connecticut")



ENTRANCE OF AN OLD HOUSE,
REDDING RIDGE

(Illustration from "Early Domestic Architecture
of Connecticut")

the present writing, is attracting larger crowds and creating a more intense interest than any part of the entire rest of the museum. The idea was sponsored by Mr. Robert de Forrest and the collections housed and arranged by Mr. Grosvenor Atterbury, the architect, in collaboration with the authorities of the museum.

It is the beautiful way in which the collections are presented and the wide field covered, more than anything else, that has fired the interest of its visitors. These collections are arranged both according to sequence of time and to locality. From the earliest work of the settlers, to the first part of the Nineteenth Century, and from Maine to Virginia, one may see the furniture, pictures, household utensils, curtains and textiles in relation to their original settings. One gets the impression of a series of beautiful pictures and a realization of the purity and intrinsic beauty of color and form of the style, and a feeling of the adaptability to our modern needs more strongly than any other collection that I know of.

In Mr. Kelly's book I have found the same

characteristics to a marked degree. The book is a fairly large one, of 207 pages and no less than 291 illustrations, consisting of photographs of exteriors and interiors, measured drawings of plans, details, doors, windows, panelling, cupboards, stairs, and hardware. The subject is distinctly limited, but it presents a complete picture of the style in Connecticut.

Each chapter deals with a separate subject, such as the development of the plan, or the construction of the house. In the chapters on doors and panelling, for instance, are given types of design from the earliest to the latest periods, and so completely, that making allowances for differences in time, due to local conditions, one may even fix dates for houses in adjoining states with reasonable accuracy. The book is so thorough and is, at the same time, written with such engaging enthusiasm and simplicity, that it makes a striking contrast to the usual learned tome on an archeological subject.

Mr. Kelly has made a very thorough study of the dates when the various houses were built, and from this has worked out a sequence of features, which clearly and logically shows the development of the plan, construction and decoration. Referring to one kind of house, he says:

"Houses of the added lean-to type are of very common occurrence; in fact, this is one of the most typical forms of the early Connecticut house. The Tyler house, near Branford (circa 1710), the Acadian house in Guilford (1670) and the Harrison-Linsley house in Branford (1690) all have lean-to additions. Originally each was of the two-room type of plan. An inspection of the lean-to attic in houses of this type generally furnishes the investigator with sufficient architectural evidence to decide conclusively whether or not the lean-to is a later addition or an integral part of the house itself. The existence of a separate set of roof rafters extending from the rear plate of the main house down to the rear plate of the lean-to does not always necessarily indicate that the rear part is of later date; nor does a difference in level between the floors of the front rooms and of the lean-to attic. The existence of clapboards, however, on the outside of the rear walls of the front rooms, beneath the lean-to roof, is incontrovertible proof that the rear portion of the house is a built-on addition. Old weathered clapboards are still in place on parts of the original rear walls of all three of the just-mentioned houses. In each they are of oak, riven out, and applied directly to the studs. Those in the lean-to attic of the Acadian house still bear traces

of the original red paint with which they were covered."

The book as a whole is one of the most complete of its kind that I have seen and should be on the shelves of every architect, archeologist, and house owner interested in the Colonial style.

WILLIAM LAWRENCE BOTTOMLEY

FRENCH PROVINCIAL ARCHITECTURE

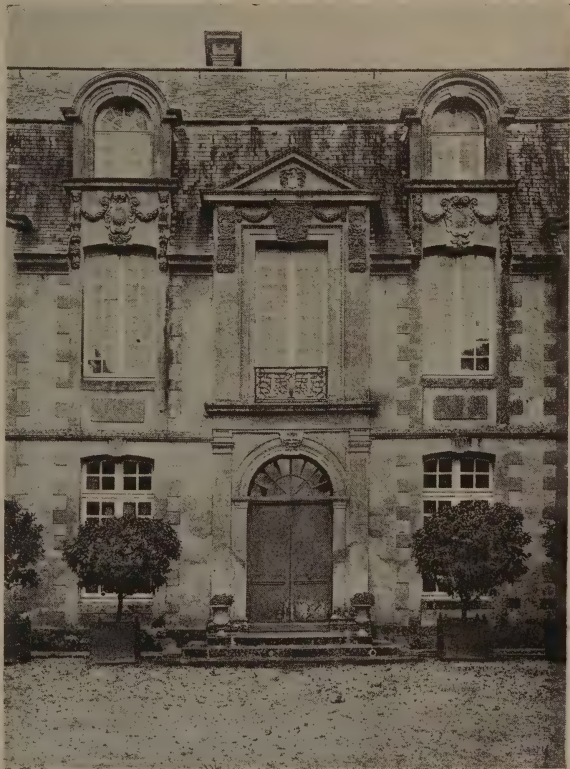
By PHILIP LIPPINCOTT GOODWIN and HENRY OOTHOUT MILLIKEN. Scribner's, New York. \$20.

The purpose of this group of measured drawings and photographs is to present to the American public some examples of French provincial architecture, town and country houses, cottages, shops and public places, adaptable to American conditions. The buildings selected date mainly from the sixteenth to the early nineteenth century.

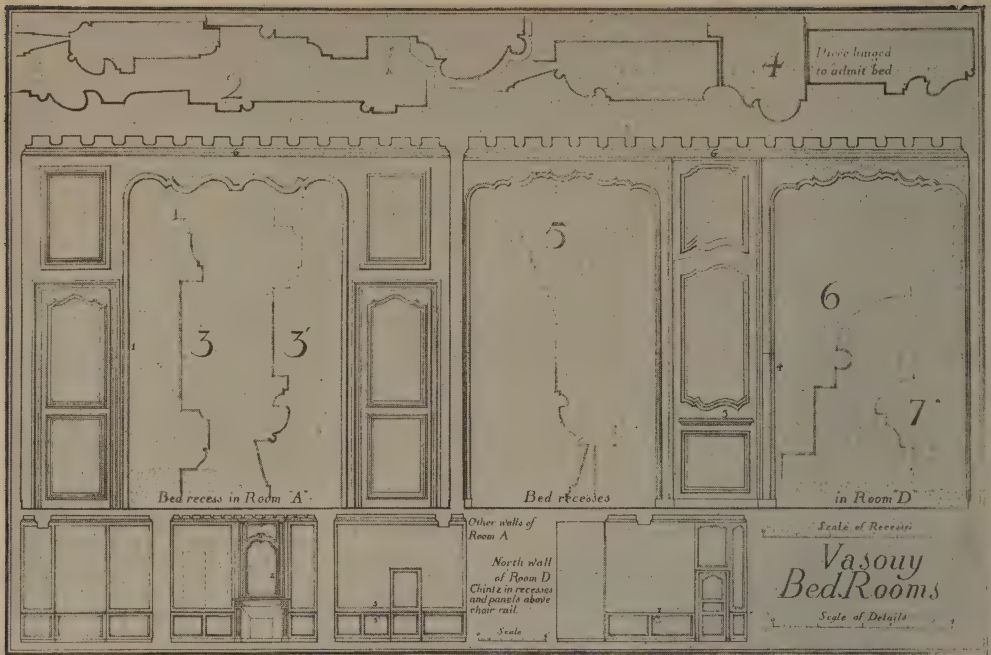
All good building is in some sense traditional, the adaptation of existing types to changing or changed conditions. Americans who go to Europe for examples are doing the natural and normal thing. For historical reasons the English influence has been, or was once, the chief one, but the French, Italian and Spanish influence has now become noticeable. The French influence has hitherto come largely perhaps through the Beaux Arts, at any rate from the châteaux and public and monumental buildings. There has been a lack of realization of the quality of charming, simple things to be found in France, in her old manors and farm houses and small towns. For the purpose of practical adaptation to American country houses, and of suggestions for American architects, this is one of the richest of fields. Moreover, there is this distinct reason for advocating the influence of French rural buildings; that, while a French and an English palace, castle, manor or farm house or shop front, may be equally charming, the charm of the French example will be apt to have in it more of the elements of design and proportion, the English more perhaps of impulse and accident, of nature and weather and the subtleties of time.

Manor houses in Normandy, especially the early ones, show resemblances to the English, for which the proximity of Normandy to England is reason enough; but down to

the middle of the fifteenth century that country and England had, besides, very definite political ties. There are the similar irregular lines and the half timber and cement, (Plates 1 and 92). But later building and that further to the south show increasing contrast. Except for those early Norman examples, French rural as well as urban architecture has more symmetry than the English. It is more calculated and less hit-or-miss. There is more stone and stucco combined with the half timber and more color variety. Where in England building materials are apt to be stone, brick and rubble, French building has felt the Mediterranean leaning toward cement and plaster. We find stucco, brick and stone all combined in the same building, where in England the materials would probably have been brick with stone trimmings. The roofs are noticeably steep, and of slate which takes variety of tone, with many dormer windows of various shapes. Practically all the windows are casement. In a climate less lush than the English, vines grow with more interesting patterns on the wall, (Plate



ENTRANCE MOTIVE, CHATEAU OF CAREL
(Illustration from "French Provincial Architecture")



PANELLING IN THE MANOR HOUSE OF VASOUY
(Illustration from "French Provincial Architecture")

49) instead of in great masses of green. Lattice, too, is more used for the vines to grow on.

On the other hand there seems to be less charm in the gardens of these old French manors than in England. They look more neglected, and the kitchen and flower gardens are apt to be mixed together.

The two farm building groups from Normandy and the Cote d'Or (Plates 1 and 17) are peculiarly suggestive. Their unsymmetrical arrangement and irregular roof lines, their picturesqueness, their unexpected detail, perhaps fit in with the best American ideals of country life better than more formal examples. But even where the walls seem severe, the details are apt to be fine. Note the beautiful stone carving on the front of the Château of Carel (Plate 10); the double flight of steps in the Villa at Nievre (Plate XXXVI) and in the house at Autun (Plates 14 and 15); the fine iron work of the balustrade of the Château of Montjalins (Plate 70), and the delightful swags over the door and upper windows. Plate 68 is only the entrance to a shop in Paris, but it is a lovely combination of ironwork and stone.

As to interiors, the early houses have exposed timbers, crudely carved chimney pieces going to the ceiling, and rough plaster walls. At later periods the old manor house rooms were almost universally panelled, but more

simply than in the great châteaux. The proportions seem to have greater breadth and less height. In the Manor near Honfleur (Plates V to XII and 18 to 26) the panelling and moulding show the work of ships' carpenters. This manor is owned by an American, the author of "Three Normandy Inns."

It may probably be hoped by others than the authors, that "this book may be of influence in the United States, where the pursuit of fashions in style has filled the land with curious sights." Fashion and style are not the same things at all, if the word style is used in its graver significance; in which sense it is one of the gravest and greatest things known to humanity. "There is a style on which the best of any country's design may be based, and that is good proportion, simplicity and suitability." The first and the last are more fundamental than the second, for not all good design is simple. "Order and movement" is perhaps the best definition of style in literature; in architecture "proportion and suitability" go a long way, and one is always safer when he is simple. The French architect tends to go rather directly and decisively at his object, and this may be illustrated by the landscape architecture of Place Vauban (Plates XVI, 41 to 46) "a long narrow promenade shaded by tall old lime trees and bounded by

plain stone walls—no elaborate pergolas or fountains”; only a dark vista with a statue at the end.—A modern landscape gardener would perhaps have peppered the site with shrubs and kiosks, and wound his mean little paths in and out of his shrubberies, and have been only indirect, indecisive and feeble. The rule seems to be something like the old dramatic canon of unity of action, and something like the old axioms of foot ball; “Keep your eye on the ball and tackle hard.” ARTHUR W. COLTON

Some Architectural Problems of Today, by C. H. Reilly, Professor of Architecture in the University of Liverpool. London, England: Hodder & Stoughton, Ltd., 1924. viii, 206 pp. 5¼x8 in. Bound in Boards. Price, 6s.

In this book the author discusses some of the architectural problems connected with our modern towns. He compares them with our eighteenth century towns on the one hand and those of modern America on the other. He criticizes our buildings, such as our banks and railway stations, our suburban houses and our religious structures, pointing out where they seem an adequate expression of our civilization and where they fail. The book is written in a popular way for the general reader. Architecture is the Art from which none of us can escape. Every intelligent citizen, indeed everyone living in a house, must perforce take an interest in it.

A Garden Book for Autumn and Winter, by Charles Downing Lay. New York: Duffield & Company, 1924. x, 303 pp., illus. 6½x9 in. Cloth. \$4.00.

Not only an eminently practical book by a distinguished landscape and garden architect, but a charming, keen and witty literary adventure. This is the only book published which deals exclusively with the garden in Autumn and Winter.

The Little Garden for Little Money, by Kate L. Brewster. Boston: The Atlantic Monthly Press, 1924. xii, 109 pp., illus. 5¼x8¾ in. Cloth. \$1.75.

“The directness, the simplicity of this book will refresh the reader. It is a sort of ‘first aid’ in garden books, and no pains have been spared to make it the practical guide that it is to the inexpensive garden.”

Planning of Small Community Hospitals, by B. Evan Parry, M.R.A.I.C. Ottawa, Canada: Department of Health, 1925. Publication No. 34. 100 pp. illus. 6½x9¾ in. paper.

A “succinct brochure,” as the author terms it. It treats of fundamental principles in estimating the cost and capacity of a projected hospital.

Handbook for Architects and Builders. Published under the auspices of the Illinois Society of Architects. 1924. Vol. XXVII. 704 pp. illus. 6¼x9¼ in. Leatherette.

The Old-World House, Its Furniture and Decoration, by Herbert Cescinsky. New York: The MacMillan Co., 1924. 2

volumes. xvi, 678 pp., illus. 7½x10¼ in. Cloth. \$17.50.

“The Old-World House” has been written to meet a general demand for a book dealing with decoration and antique furniture, written by a recognized expert on the subject, yet dealing only with such examples as the modest collector can acquire. Here will be found advice on the collecting of furniture, its arrangement, the decoration of rooms, and a hundred and one other subjects of interest to the home-lover. Examples are given of furniture and woodwork from Tudor days until the end of the eighteenth century, and practically every page is illustrated.

Sticks and Stones, A Study of American Architecture and Civilization, by Lewis Mumford. New York: Boni & Liveright, Inc., 1924. 247 pp. 5¾x8½ in. Bound in Boards. \$2.50.

In “Sticks and Stones,” Mr. Lewis Mumford sums up in compact and concrete form the dominant forces of American civilization, as revealed in its architecture. At the same time, he shows how the forms of architecture have persistently changed, in response to new forces—new traditions, new materials, new social habits and esthetic interests. Perhaps no one has taken such a wide and significant view of our architecture and civilization before; and it is safe to say that Mr. Mumford has blazed a new trail in social criticism. The broad humanism of these essays lifts them high above any purely technical pre-occupation or interest; and yet their appeal to the architect is so close that the chapter on the Imperial Age has been published simultaneously in America, England, and Germany.

The Nature, Practice and History of Art, by H. Van Buren Magonigle. New York: Charles Scribner's Sons, 1924. xx, 314 pp. illus. 5¾x8¾ in. Cloth. \$2.50.

“In this extraordinary synthesis of the history and philosophy of art, a brilliant pageant of schools and personalities of all the arts deploys against a rich background of secular history. The author's style, in itself thoroughly personal and vibrant with enthusiasm, is as exceptionally attractive as the substance it clothes. Numerous illustrations carefully supplement as well as embellish the text. Mr. Magonigle's book has not outgrown the student of art for whom it was originally intended, but in the course of its composition the author materially broadened its scope, with the result that the general reader will find it a fascinating epitome of the history and philosophy of the fine arts as certainly as the professional and the amateur will profit by its lucid exposition of technical processes.”

American Society of Heating and Ventilating Engineers Guide—1924-25. Containing Reference and Design Data Useful in the Planning and Construction of Modern Heating and Ventilating Installations—Prepared from the Society's Transactions—Investigations of Its Research Laboratory—and the Practice of Its Members; Together with a Catalog and Reference Data Section Containing Essential and Reliable Facts Concerning Modern Equipment; and The Roll of Membership of the Society. New York: American Society of Heating and Ventilating Engineers, 1924. Vol. 3. 510 pp. illus. 6x9¾ in. Cloth. \$3.00.

Church Building, by Ralph Adams Cram, Litt.D., LL.D., F.R.G.S. A Study

of the Principles of Architecture in Their Relation to the Church. Boston: Marshall Jones Co., 1924. 3 ed. xxiii, 345 pp. illus. 6x9½ in. Cloth. \$7.50.

Church architecture, since the Reformation, has been characterized by a deplorable lack of consistency and continuity. The natural process of development once arrested, the last four hundred years show a record of confusion, artificiality, and complete absence of central governing motives. Mr. Cram makes a strong plea for re-application of the ancient and eternal principles in church building, believing that art, as the handmaid of religion, is the greatest agency for spiritual impression to which the Church may lay claim. New material has been added to this authoritative work, now announced in a fully illustrated, enlarged and revised edition.

Economy in Home Building. With a Consideration of the Part Played by the Architect, by Oswald C. Hering, A.I.A. With a Foreword by Royal Cortissoz. New York: Robert M. McBride & Co., 1924. xiv, 2110 pp. illus. 7x10¼ in. Cloth. \$5.00.

This book, by an architect of wide experience, lays the foundation for success and economy in planning and building the house of good taste. It is written primarily with the man of moderate means in mind and treats with such important questions as selecting the architect, the relations between architect and client, estimates and bids, choosing the contractor, selecting the site, what type of house to build, methods of construction and comparative costs, means to economy in building, and problems of lighting, heating and sewage disposal. It contains, also, chapters on country and suburban homes, particularly the small house, on bungalows and the remodeling of old houses. A wide range of floor plans and photographs of successful houses of various styles and types by many of the best architects of the country complete the text.

A. S. T. M. Standards. Philadelphia: American Society for Testing Materials, 1924. 1220 pp., illus. 6x9¼ in. Cloth. To non-members, \$11.00. To members, \$8.00.

[The following may be secured by architects on request direct from the firms that issue them, free of charge unless otherwise noted:]

Trees, Shrubs, Etc. "Beautiful Home Grounds." Griffing Nurseries, Beaumont, Texas. 7½x10½ in. 32 pp. Illustrated.

Varnishes. "Eight Periods—and Their Modern Adaptation." A Brief Exposition of Some of the Principal Periods of Interior Decoration Adapted to Modern Usage, with Specifications for the Finish of Woodwork and Fixed Decoration. Murphy Varnish Company, Newark, New Jersey. 8½x11 in. 44 pp. Illustrated.

Wiring Devices. "Architect's Handbook of H. & H. Wiring Devices." The Hart & Hegeman Manufacturing Company, Hartford, Connecticut. 8½x11 in. 16 pp. Illustrated.

Flooring. "Floor Perfection with Condatheor—The Perfect Flooring." The Manhattan Rubber Manufacturing Company, Pas-

saic, New Jersey. 8½x11 in. 16 pp. Illustrated in Actual Colors.

Fireplaces. "Donley Book of Fireplaces," 3rd Edition, 1925. The Donley Brothers Company, 13900 Miles Avenue, Cleveland, Ohio. 7½x10½ in. 24 pp. Illustrated.

Conduits. "The Story of Sherarduct." Sherarduct Sherardized Rigid Steel Conduit National Metal Molding Company, Pittsburgh, Pennsylvania. 8½x11½ in. 36 pp. Illustrated.

Pipes, Fittings, etc. Milcor Furnace Pipe and Fittings, Stove Pipe and Elbows. Catalogue No. 25. Milwaukee Corrugating Company, Milwaukee, Wisconsin. 8½x11 in. 36 pp. Illustrated.

Switches. The "Minneapolis Automatic Recycling Motor Program Switch." Minneapolis Heat Regulator Company, Minneapolis, Minnesota. 7¼x10½ in. 8 pp. Illustrated.

Fans. "Clarage New Type H. V. Fan." Reference Book No. 53. Clarage Fan Company, Kalamazoo, Michigan. 8½x11 in. 48 pp. Illustrated.

Floor Treatments, Damp-proofing and Water-proofing Materials, Paints, etc. Specification Data L. Sonneborn Sons, Inc., Architects' Service Dept., 114 Fifth Avenue, New York City. 9¾x11¾ in. Looseleaf. Illustrated.

Urinal Stalls. The Duplex All Clay Semi-Vitreous Porcelain Urinal Stall—Two in One. Wheeling Sanitary Manufacturing Company, Wheeling, West Virginia. 3¾x8¾ in. 12 pp. Illustrated.

Plants. "American Grown Roses." Bobbink & Atkins, Rutherford, New Jersey. 6¾x10 in. 64 pp. Illustrated in Colors.

Shellac. "Shellac—Its Uses and Abuses," and "Shellac—Its What and Why." James B. Day & Company, 224 West Superior Street, Chicago, Illinois. 3½x8½ in. 52 pp. Illustrated.

Store Fronts, Copper. Catalogue No. 29, Including Separate Sheets of Detailed Illustrations Describing Brasco Copper Covered Creosoted Wood Sash. Brasco Manufacturing Company, 5025-5035 South Wabash Avenue, Chicago, Illinois. 8½x11 in. 16 pp. Illustrated.

Waterproof Compounds, Liquid Hardeners, Metallic Hardeners, Asphaltic and Waterproof Paints, etc. Set of nine Bulletins. Ceresit Waterproofing Corporation, 10 South La Salle Street, Chicago, Illinois. 8x10¼ in.

Blackboards. Casco Artificial Slate Blackboards. Chicago Artificial Slating Company, Room 408, 127 North Dearborn Street, Chicago, Illinois. 9x4 in. 8 pp. Illustrated.

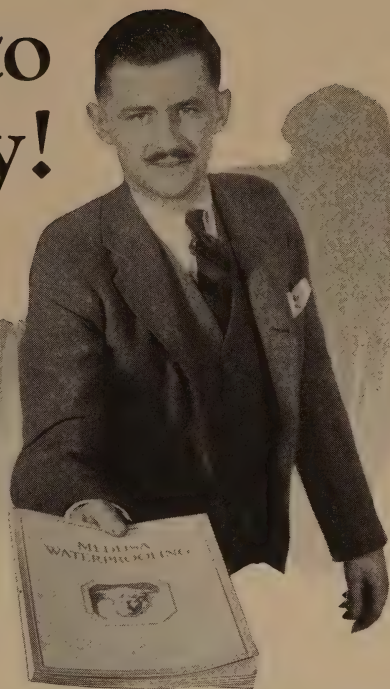
Oil Burners. Illustrated Folder Describing Simplex Oil Burners. Catalog 20. Bunting Iron Works, Oil Burning Department, First National Bank Building, San Francisco, California. 8x11 in.

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Eugene F. Savage.



FAME AND FORTUNE
EUGENE F. SAVAGE

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"NOCTES MANHATTANENSES"

*Impression of the Fifty-Eighth
Annual Convention of the
American Institute of Architects*

By Hubert G Ripley

THE ANNUAL PILGRIMAGE of the faithful worshippers of the Heliconiades led them this year to the great metropolis. At some personal sacrifice, many architects from many chapters including a number who were not delegates, postponed important business conferences and made the trip from every quarter of the United States and the Virgin Isles. The age average this year was higher than is usual at Institute Conventions. Doubtless at Washington next year our younger men will attend in greater numbers. A very complete, careful, and conscientious report of the proceedings, written without bias before the Convention began, by Mr. Murchison, appeared in the May number of "The Architect," so that those who found it difficult to attend every session were enabled to tell a connected story of the doings of their fellows on their return home. A four-page sheet, folio size, the "A. I. A. Con-

vention Daily," full of interesting leading articles, announcements, and half tone photographs of notable men and women, was ready promptly each morning for the convenience and instruction of all visiting architects.

The Hotel Roosevelt, Convention headquarters, is an attractive twenty-story building occupying a whole city block with all the set backs, outer courts, and other zoning features that are so fashionable this Spring. All guest rooms are outside rooms, quiet, well ventilated, and, even from the inmost court, glimpses may be had of towering masses of imposing masonry, classic temples on two hundred-foot stylobates, and soaring turreted pergolas of brick and tile.

Arriving at the Grand Central Station one takes a taxi and directs the driver to the Roosevelt in a careless off-hand way, just as if one were accustomed to do this sort of thing every day. After

a pleasant drive across Vanderbilt Avenue one arrives at the hotel where, fortunately, a room has been reserved.

The system of room numbering at the Roosevelt is based on historic precedent. Famous dates in American history are commemorated by such numbers as 1492, 1620, 1776, etc. Other rooms were easy to remember, 1621, for example, as the year after the Pilgrim landing, following the great drought, when the first feast of Thanksgiving was held. The ball room served the first day as registration headquarters and for luncheons during the week. Every convenience was offered to the visitors in the way of information regarding excursions, teas, theatres, restaurants, night clubs and roof gardens. For each day a different colored ticket was issued under the seal of the Institute, place of the Convention, (in this case New York, N. Y.) and the menu for the day from 9 a. m. to 6 a. m. the following morning. Between 4 and 5 p. m. and 6 and 9 a. m. the visitors were allowed a much needed rest. After registering and receiving a very tasty badge with pin, satin colored ribbon with gold locket pendant, a pack of vari-colored cards, theatre tickets, boat tickets, luncheon tickets, committee reports, invitations to teas, receptions and functions, the Convention Daily and programs for many events, and gathering up the accumulated mail from the office (mostly invitations from the Si-Roc-Co Exhaust Fan Ventilating Company, and the Own Your Home Corp. Ltd., to visit booths at the Exposition) the delegates and visitors scattered in little clusters to various places of amusement and refreshment so that they might with renewed vigor take up the more serious and solid duties devolving upon them as representatives of the noblest profession in the world.

Manhattan (and the Bronx) are replete with distractions. For every mood, every whim, every purse (especially the plethoric) there are compensatory analogies. When a number of men and women all professing the same "group of ideals," (as one of the speakers at the Convention so aptly phrased it,) are gathered together in the greatest city of

the world, freed from the shackles and conventionalities that bind and coarctate the frank and natural development of their individualities, a subtle process of incogitancy, or selective eclecticism, finds expression in significant form.

It was so on Monday night, and sympathetic co-operation was not found wanting on the part of our hosts. The Exposition was thrown open to an eager public in the evening, which quite swamped the delegates, so that the great show was one vast beehive of milling masses of people with now and then a familiar face or voice, quickly lost in the seething cauldron that confined the crowds between walls of celotex. Above the voices of the thousands that thronged the mazes of corridors and booths could be faintly heard a few words now and then of the address of welcome, and the announcements of the prize winners. Interwoven with this babel was the noise of hammer and saw of men working feverishly to complete certain of the delayed exhibits. The whole was reminiscent of Gershwin's "Rhapsody in Blue," or Moussorgsky's "Fair at Nijni Novgorod."

The Architectural and Allied Arts Exposition was so Gargantuan in extent as rather to dismay the timid visitor as well as to discourage the native. The only way to get anything out of it was to stroll around a little till you came to something of interest—concentrate there for a while and then return to the Roosevelt for relaxation and rest. Many famous names were noted appended to splendid exhibits, but what was of equal or even greater interest was the presentation. Any building that was not notably presented, either by the seductive art of the photographer who knew how to manipulate light and shade, soften hard outlines, enhance the brilliancy of wall surfaces and sun-flecked paths or by the alluring pencil of Otto Eggers, Hugh Ferriss, Schell Lewis, Chester Price, and the facile brush of Jules Guerin and Birch Long, had very little chance of recognition in the maelstrom. It seems as if the acme of pencil and crayon rendering has been reached by these geni. As for the work of Guerin and Long, it is the

despair and the stimulus of all architects and draughtsmen. What interests the average architect almost as much as the design of a building is the way it is presented and it is always comforting, on being shown the work of some esteemed confrère to say, even if you do not care for the building itself, "What a charmingly bully drawing." The architect is just as much pleased and proud to hear the praises of the medium of his presentation, as he is to listen to an appreciation of his design. His absorptive powers adjust themselves to conditions very rapidly, as was shown in many instances during the survey of the Big Show.

After an hour or so spent at the Exposition, it was a disappointment not to find around the corner where the drawings of the 9th regional district elbowed the electric ranges and roll top garage doors, a hot waffle stand. We really needed a waffle and did not dare go to the Roosevelt Grill for one after what happened there to Charlie Baker, who innocently invited a party of four for a lemon ice.

The Convention Sessions were held in a high hall on the main floor, approached from the grand staircase. Mr. Greenley's art had transformed this apartment into a classic-medieval-renaissance salon, crowned by the deep blue vault of one of Cleopatra's nights. The inspiration may well have been Gautier's for "the curious stars leaned over the frieze." At one end of the hall was a marriage of painting and sculpture; two naturalistic modelled figures in color "*qui beauté eut trop—plus qu'humaine*," that looked like paintings, and a wall decoration of three panels, in deep chiaro-oscuro that one would take oath was in high relief. The lighting and color scheme of the court was opulent and highly concentrated, forming the culminating point of the Exposition. As a convention hall the court salon made a very splendid arts and decoration gallery. This mattered little, however, as all sessions were greatly curtailed by the omission of routine business, discussions and reports. Only the briefest papers and speeches were delivered which, due to the use of micro-

phones and loud speakers could be better heard in El Paso, than in the hall itself. By the use of these modern inventions one is enabled to listen to causeries and papers, hear the sound of the voice perfectly (de-humanized to a curious degree, it is true,) without understanding any continuity of ideas. It is quite extraordinary how it is possible to hear words, without, except by great mental effort, being able to arrange them in logical sequence. It must be that, due to the strangeness of the sound, an appreciable interval is necessary to recognize a word; by this time the next word is lost and one only takes in a geometrical progression of verbs, substantives, and prepositions; skipping the adjectives, adverbs and conjunctions, and vice-versa.

The result is easy to listen to and not unpleasant. One is left free to speculate on the futility of mundane affairs, greet old friends and make appointments. Outside the salon court where "amplifiers" and "loud speakers" were installed, the voice became clear and distinct like a bedtime story over the radio. Few seemed to pay much attention to the proceedings—the delegates as a rule preferring to remain in the room with the speaker, perhaps to lend him their moral support and encourage him with grateful applause and thanks when he finished.

The luncheons in the Hotel Roosevelt Ballroom must have been a source of satisfaction to the committee, to the hotel management and to the waiters. To the committee for their popularity, to the hotel management for financial reasons, and to the waiters for their opportunity to see interesting people and listen to stimulating discussion. Who knows but at some future convention, a great artist whom we are privileged to honor may rise in response to deafening applause and say: "It was my good fortune to wait on a party of architects from St. Louis, Boston and New York, at the Convention luncheons in the Hotel Roosevelt in the Spring of 1925. I was a young man at the time, newly arrived from Jugo-Slavia. We were clearing away the débris of the French pastry and quarrelling over the division of the tips,

when a chance remark by Louis La Beaume, overheard in a temporary lull, caused me to pause and reflect that there might be a nobler fate in store for me and that money is not everything. The rest is history."

Hot afternoons have been in Manhattan as well as in Montana, and the programme that the entertainment committee had prepared, for the visitors included an excursion by boat around Manhattan Island (executed only in part, due to the fierce tides of Hell Gate, and the traffic jam of the garbage scows in the draws of the Harlem river at Spuyten Duyvil), tea for the ladies at the Colony Club and the Junior League, concerts at Aeolian Hall, bus rides up and down the city and receptions in architects' offices. Wednesday and Thursday were the hottest of these afternoons; Wednesday by virtue of visits to the offices of the great and near great (it was hoped by some that this would be a unique opportunity to learn much of the methods and practices of Big Business, how these giants managed their designers and how they ran their Secret Service; but the offices were deserted by their draughtsmen, the boards neatly covered over with dust cloths, only a select few of the department heads remaining to ladle out the punch and pass cigarettes and caviare) and Thursday by virtue of climatic conditions; (the heat was so intense that Acker Merrall and Condit, the McKim Meade and White of *épiciers*, had to send an extra gross of cases of White Rock to the Roosevelt).

The hours between five and seven, the twilight hour or children's hour (when the alcohol lamps are lit and tea is served) were some of the most enjoyable moments of the week. These interludes passed in joyous companionship with old friends from far away cities will always remain treasured memories. Usually the evenings were arranged so as to follow in natural sequence the twilight hour. Some celebrated the feasts of Pantagruel and Seithenyn, while to others the platonic friendships of Brunbellois possessed a peculiar fascination. The art of the Drama was not neglected,

though the doors of the Theatre Guild were closed to all non-subscribers. If one could not see Helen Hayes, one could at least visit the scene of her recent triumph (an Ionic play with a most satisfactory ending). The Music Box Review was more in the late Corinthian style, florid with well decorated supports. To our mind, Metropolitan drama, as exemplified by these two productions, is vigorous, sound, and on a parity with the best architectural traditions. Just as much that is executed in masonry and steel is unworthy of the name of architecture, so the votaries of Telxiope, Aoede, Arche, and Melete are not always found entirely faithful to their trust.

Thursday evening was set aside for dinners and receptions. It was the good fortune of some to be invited to the Architectural League for dinner, followed by a group of Benda's masques and dancing. The occasion was most successful and time passed so rapidly that it was unfortunately too late to attempt the reception and musicale at India House, which, from reports, was one of the high lights of a brilliant evening. Long tables in the League Hall were filled with the beauty and chivalry of the votaries of the Fine Arts. Personalities and names, famous in three continents, rubbed elbows with modest violets from the East Texas Chapter, Toronto, and Kav Kas. From his seat at the head table, where his presence lent an added dignity and grace to the occasion, Mr. Harvey Corbett announced that there would be no formal speaking and that he was leaving shortly to gather up Sir Edward Lutyens (the dinner guest of the St. George Society) and replace him as the guest of the League. This was shortly accomplished, and all adjourned to the Galleries of the National Academy of Design to view the exhibit of modern paintings displayed on their walls. Thence the company took seats in the adjoining hall to witness Mr. Benda's masques. These acts were hugely enjoyed and very easy to watch, and included a café scene, two exquisite dances by the delicious Dixie, and the rendering of patriotic national anthems by a group of Muscovite singers

in their quaint native dress. There is a haunting wistfulness in the music of Moskovitz that only the Cossack tongue can interpret. It was so in this instance and the response of the audience was electric. Sir Edwin was seen to wipe a furtive tear with his hemstitched handkerchief of Delhi cotton. After the entertainment, dancing was enjoyed till an early hour, whence the company dispersed in various directions, some even returning to their hotels.

The reception and concert at the Metropolitan Museum of Art on Friday evening was very beautiful, dignified, harmonious and colorful. We have visited the Museum on many occasions but never before under such favorable conditions. Despite the great number present—there must have been between five and ten thousand—an air of stately magnificence and quiet formality added luster to the priceless objects on display, and gave to them a fitting setting. The rich gowns of beautiful women, their graceful movements and scintillating jewels, the courtly demeanor of notable men in faultless attire, were in close attune with the strains of Tchaikowsky's "Fourth Symphony in Andante Sostenuto" and Rimsky-Korsakoff's first movement of "Symphonic Suite, Scheherazade," interpreted by David Mannes and a Symphony orchestra. A last opportunity for this convention was here offered to view at close range the officers of the Institute and many distinguished men and women from foreign shores.

Shortly after nine, the bugle call sounded for the procession down the grand staircase, of the brilliantly robed delegates to the main hall where, on a raised dais were ranged Dr. Waid, the presiding officer; Mrs. Goodhue, Sir Edwin Landseer Lutyens, the Honorable John W. Davis, LL.D., the Honorable John H. Finley, LL.D., and others. The Honorable John W. Davis delivered the presentation address, after which Dr. Waid awarded the gold medal of the Institute to Sir Edwin, who responded in one of the best speeches we ever saw. Dr. Finley delivered a very fine appreciation of Bertram Grosvenor Goodhue, one

of the most lovable and forceful geniuses American architecture has ever known. Dr. Finley's remarks were sympathetic and scholarly, and touched a responsive chord in the heart of every lover of the fine arts. Dr. Waid then placed the gold medal of the Institute in the charge of Mrs. Goodhue. While the audience lingered in the halls of the vast Museum, the orchestra rendered Bach's "Aria" and "Bourée" and Wagner's "Tristan and Isolde," concluding with the "Entrance into Walhalla," from Das Rheingold.

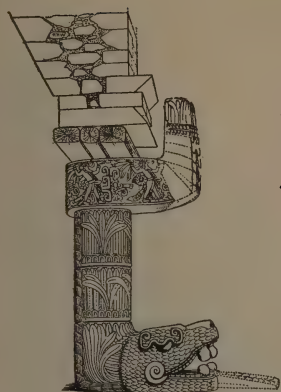
Saturday morning (7 a. m.) dawned bright and clear for the excursion to Princeton—but by train time (10:15), the sky was overcast for the first time during the week. About eighty, a comfortable carful, made the trip and the day proved a most profitable one. Our host, the Department of Architecture of the University of Princeton, had most generously given up the day to the architects attending the Convention with their ladies. The architectural school was visited, a delicious luncheon served in Proctor Hall, and drives made around the campus allowing opportunities to view the natural beauties of that historic town as well as the splendid recent buildings for which the University is famous.

The statement was frequently heard during the day that Princeton, all things considered, without doubt possesses the most lovely site, the most beautiful buildings, and is the nearest approach to the ideal college of any such institution in the United States. These statements were unchallenged and easy to believe. Princeton is a one street town, and the University lies wholly on the south of the broad highway of Nassau. Its plan while picturesque, is not haphazard, but sound and logical. The arrangement and groupings of the quadrangles on the rolling mounds and ha-has of the last glacial moraine are eminently suited to the mingling of styles that the buildings show. That's one reason why we liked Dr. Cram's Architectural School, even though others of the party rather shied at it. The list of architects of the University Buildings is a notable one—from Robert Smith's Nassau Hall, 1756, to Day

and Klauder's Eno Hall, 1924, and includes such names as William A. Potter, A. Page Brown, J. L. Faxon, R. M. Hunt, Cope and Stewardson, B. W. Morris, Cram, Goodhue and Ferguson, McKim, Meade and White, Zantzinger, Borie and Medary, Park and Morgan, Ernest Flagg, E. V. Seeler, Mellor and Meigs and others. The time spent in Princeton was far too short, at least a week would be advisable, an ideal vacation for water color sketching. The staff of the Architectural School, headed by Edward Raymond Bossange, Ph.B., were most assiduous in their attention and everyone was given an opportunity to browse around at will through the yards and courts, singly and in groups, so that intimate acquaintance with detail and material could be formed. The group of buildings known as the Graduate College (Proctor Hall, Cleveland Tower and Wyman House) by Cram, Goodhue and Ferguson, made a tremendous impression on all, not only for its picturesqueness and beauty of detail, purity of outline and stately mass, but also for its magnificent setting on slightly elevated ground overlooking meadow land and hills, the richly tinted stone work of its walls clasped in the clinging embrace of heder helix, and wisteria frutescens. Holder Hall, by Day and Klauder, is so absolutely and perfectly fascinating in its loveliness, so natural in its simple perfection, that it seems to exist in an ether of its own, without in the least ceasing to

form an integral part of the University Group. The Faculty Houses by Park and Morgan form a long group shaded by stately elms that create a picture unexcelled in natural dignity. There are many architects, who with large resources at their command, produce successful buildings of great beauty, but it has always seemed to us that the real test of greatness lies in being able to do a really successful small house. The phrases from a recent trade circular, describing a great building as "man's utmost resources in mathematics and metallurgy" and "his furthest advance in culture since he devised the first crude hut," mean little except for their virtue as belles-lettres—the true test of man's advance is his accomplishments in small house building. For each towering mass of gorgeousness, as exemplified by the skyscraper, there are millions of hopelessly sordid, turgid, flaccid, and barbaric little barracks, dwelling places of the shackled souls who inhabit them. There are some beautiful small houses, well planned and built, in which man may live, expand and enjoy life, but their percentage is infinitely minuscule. Until such time as the number of these dwellings is greatly increased we shall continue as a nation to dwell in outer darkness.

The International Town, City and Regional Conference meetings, held jointly with the Institute, should be of very great significance to architects, publicists and the future of American Architecture.



The ARCHITECTURE of the ANCIENT MAYAS

By S. K. Lothrop



TWO THOUSAND AND THIRTY years ago a Maya Indian carved an inscription on a small jade statue. This was no mean achievement, for the carving of jade in itself is not easy, and the inscription shows that an elaborate system of writing was already in use. Furthermore, in the text of the inscription is a date which records a count of 1,196,017 days or nearly thirty-three centuries from the mythical starting point of Maya chronology. The mathematical system involves the use of zero, which was not employed among our European ancestors until the twelfth century, A.D. The evidence of this small statue* is then that the Maya had reached a high place of culture before the beginning of the Christian era.

OUTLINE OF MAYA HISTORY

The development of Maya culture and even its place of origin, are buried in the dense jungles of the tropics, or, recorded upon wood or other perishable materials, have been obliterated by the destructive climate. However, we know that at the beginning of the Christian era the Maya moved into the southern part of Yucatan and the northern part of Guatemala. Here they built great cities—Tikal, Copan, Naranjo, Palenque, Yaxchilan, and a host of others slightly less important—in which they dwelt until the end of the sixth century, A.D.

*This remarkable carving, which bears the earliest recorded date yet found in the New World, is known as the Tuxtla statuette, because it was found at the Mexican town of San Andres Tuxtla. It is now in the U. S. National Museum, Washington, D. C.

After occupying these cities for several centuries, the Maya suddenly abandoned them all, for reasons that have remained unknown. Why a great civilization representing a vast investment in permanent buildings, should be thus completely deserted is a puzzle which archaeologists have not solved. War, pestilence, famine, political and moral decadence, climatic changes, breakdown of the agricultural system, and other causes have been suggested, but no wholly satisfactory explanation has yet been offered. From the gulf of Mexico to the bay of Honduras, however, stands a series of ruins which bear silent witness to the fact that the Maya once inhabited them, and the date of the exodus we can judge from the fact that all new construction and the recording of dates suddenly ceased near the end of the sixth century, A.D. Today reforestation has taken place, and cultivated lands and buildings are swallowed up by the jungle.

Thence ensued the Dark Ages of the Maya tribe, a period of wandering, of temporary settlements, and probably of much unrecorded fighting. By the end of the tenth century, however, they again became stabilized, and new cities arose in the highlands of southwestern Guatemala and in the peninsula of Yucatan. In the south there sprang into existence the highland kingdoms of the Quiché and the Cakchiquel, which endured until the Spanish conquest. In Yucatan there was organized the League of Mayapan, composed of the cities of Mayapan, Uxmal,



FIG. 1. A TIKAL TEMPLE



FIG. 2. THE CASTILLO AT CHICHEN ITZA

(Courtesy of the Peabody Museum)

and Chichen Itza, the vast ruins of which may be seen today.

The League of Mayapan ruled the peninsula until the year 1201, when war broke out between Mayapan and Chichen Itza. The ruler of Mayapan brought mercenaries from Mexico, with whose aid Chichen Itza was captured and sacked. These Mexicans are believed to have been Toltecs, one of the several predecessors of the Aztecs in the valley of Mexico. As a reward for their services they were

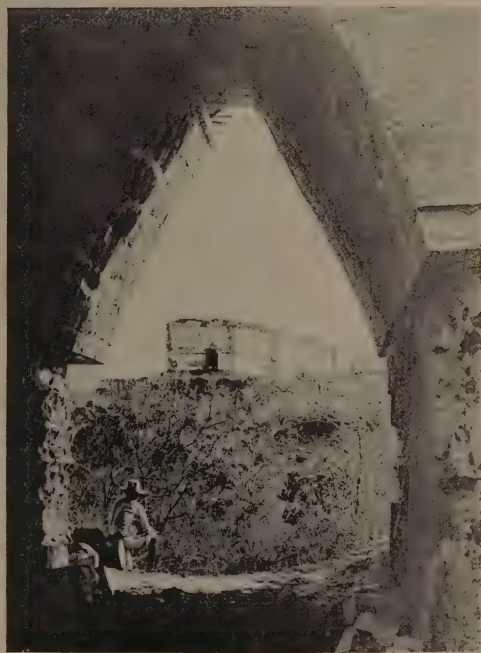


FIG. 3. PASSAGEWAY IN THE HOUSE OF THE NUNS AT UXMAL, YUCATAN

given the city of Chichen Itza as their own, where, as an old account says, can be seen the "sumptuous edifices" which they erected (Fig. 2).

As a result the conquerors became lords of the peninsula, and ruled with no light hand. They resisted the efforts of the Itza to regain their capital, but finally were overcome and the whole family put to death (except one who was absent in Mexico) by a coalition headed by the city of Uxmal. This

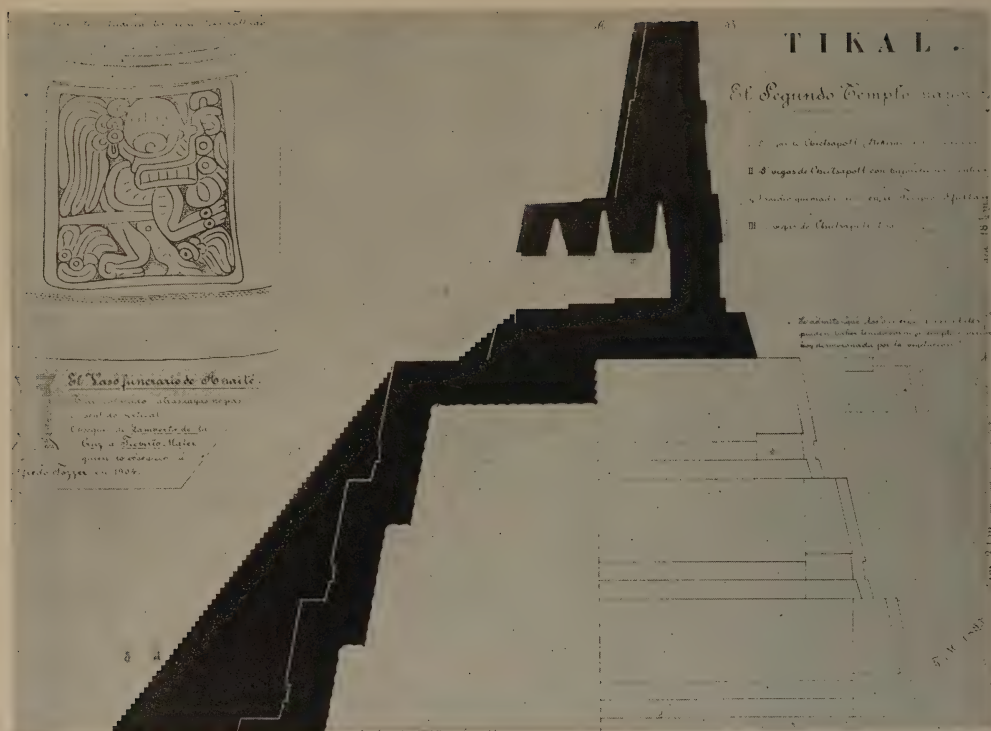


FIG. 4. CROSS-SECTION OF A TEMPLE AT TIKAL, GUATEMALA



FIG. 5. A TWO-STORIED PALACE AT EL CAYO, GUATEMALA



FIG. 6. THE JAGUAR STAIRWAY IN THE EASTERN COURT OF THE ACROPOLIS AT COPAN

(After a Drawing by Henry Sandham)

event, which took place in the year 1458, really marks the downfall of the Maya civilization. Famine and pestilence now followed in the wake of civil war and took their inevitable toll of the population. Such was the country encountered by the Spaniards, who, driven off at their first attack, returned and conquered by taking advantage of the native dissensions.

GENERAL FEATURES OF MAYA ARCHITECTURE

Maya buildings were built of the limestone which forms the backbone of the Yucatan peninsula. This stone was crushed to form rubble, cut to form building blocks, and burned to form cement. The walls were made of rubble and cement faced with a veneer of cut stone.

Such construction is essentially monolithic, for the stone veneer had but little effect on the stability of the walls. Indeed, often only the outer face of the stone was carefully dressed, and the back remained an irregular mass projecting into the cement core of the wall. With this type of construction the bonding of courses and corners and other features of true masonry are unnecessary.

The interior rooms almost invariably had vaulted ceilings. Although the true arch was known, as is proved by a few isolated examples, we find in its place the corbelled or overstepping vault, in which each half is able to stand by itself, and which is topped by a *capstone* instead of a *keystone*. This may be seen in Fig. 3, which shows the outer end of



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FIG. 7. THE HIEROGLYPHIC STAIRWAY AT COPAN
(Reconstruction by Henry Sandham)

June, 1925



FIG. 8. THE TERRACED PALACE AT LABNA, YUCATAN

a vaulted passageway. Vaults of this type were used in early times in Europe, the best known examples of which are probably the famous tombs and gateway at Mycenae. Its chief disadvantage lies in the fact that it cannot span wide spaces without undue height, but, on the other hand, it can be built without the use of supporting forms. Incidentally we may say that the Eskimos are probably the only people in the world who habitually build true arches without the use of some kind of form.

Maya buildings standing today are of two types. One of these is a small edifice with few rooms, evidently a temple. The second type has many rooms, was evidently used for residential purposes, and is today known as a "palace." The temples were often set on pyramidal substructures, towering as much as a hundred feet in the air (Fig. 1). A cross-section of such a temple (Fig. 4) shows a vast amount of solid masonry in relation to the room space. In the heart of the pyramid there might have been tombs, but this can only be determined by excavation. Palaces also were raised on substructures, but as they were much larger, it was not possible to lift them so high

in the air. An example of this type of building is seen in Fig. 5.

On account of the lofty bases of Maya buildings the stairways are an important architectural feature, forming a central motive *in antis* which fills the place of columns and pediment in Classical architecture. The Maya architect achieved harmonious and striking results in his treatment of steps and balustrades, often with much associated sculpture, as can be seen from the two stairways at Copan, illustrated in Figs. 6 and 7. Of these Fig. 7 deserves a special word. These stairs are thirty-three feet wide, including the balustrades, and originally measured one hundred and twenty-five feet up the slope. Across the rise of each step runs a hieroglyphic inscription, from which no less than twenty-eight dates have been deciphered. From stylistic and other evidence the stairway itself appears to have been built and carved during the last twenty years of the fifth century, A. D. Unfortunately, the upper part of this great work was destroyed by a landslide, so that but little remains in place today, although innumerable carved blocks have been recovered from the debris. Sandham's restoration which we reproduce may not



be entirely accurate in all details, but it admirably preserves the spirit of the original.

The Maya architect's delight in tall buildings was in part gratified by high substructures but it was cramped by his dislike of many-storied edifices, for he evidently feared that the peculiar arch in use could not carry the superimposed load. This difficulty was overcome by placing rooms on terraces at different levels, with each range resting on a solid foundation, as at the palace at Labna (Fig. 8). In some instances, however, two or even three stories were built directly over each other as at El Cayo (Fig. 5). More commonly the effect of greater height was obtained by placing one of two kinds of construction on the roof. One of these forms, known as the roof comb, has a history which can be traced for over a thousand years. The oldest type (Fig. 4) is a solid mass of masonry which covers the greater part of the roof and towers aloft like the steeple of mediaeval Europe. The Maya soon saw that this form placed an unnecessary load on the roof, and the weight was cut down by introducing interior rooms. Still later the roof comb was reduced to two lattice-work walls tied together by horizontal bands, of which the most delicate examples are found at Yaxchilan (Fig. 20) and Palenque (Fig. 9). The final stage is found on the Renaissance buildings in Yucatan, where the roof comb is a single wall pierced by rectangular openings. This is well shown in Fig. 10 which also introduces us to the second type of roof construction, namely, the false or flying façade. This device is found in the smaller communities all over the United States today, usually built across one end of a gable roof, and is too well known to require further comment.

THE DECORATION OF MAYA BUILDINGS

The façade of Maya buildings is surmounted by a cornice, and is divided into two roughly equal portions by a moulding. The upper zone usually slopes backwards in Old Empire structures (Fig. 9), but both zones are vertical in Renaissance buildings (Fig. 13). The upper zone is

the chief locus of decoration during both periods of Maya history. Traces of paint are often seen on both zones, and it is certain that the lower zone was at times adorned with frescoes.

The relief decoration of Old Empire times is composed of figures of the gods and various mythological animals associated with them. The chief characteristic of this art is the quality of the line-work, in the most perfect examples of which the arc of a circle and the straight line are both tabu. It is most difficult for the average person today to approach Maya art sympathetically, for, although the skill in design and perspective are evident and the beauty of line is unquestioned, the whole effect is cloaked by the symbolism of a religion which remains incomprehensible to the modern mind.

On the buildings erected during the League of Mayapan the decoration consists of inset panels of stone lattice work, huge frets, and geometric conventionalized faces with long curling noses (Fig. 13). Interspaced with these are certain minor life forms, lacking the vigorous rendering of the previous epoch (Fig. 11). After the arrival of the Toltecs sculptured decoration is more common on the door jambs, lintel, and columns than on the façade. The subject matter is usually warriors or gods with associated heraldic or astronomical signs. The frescoes of this period are particularly pleasing, portraying as they do many scenes from the daily life of the people.

OLD EMPIRE EDIFICES

In the earliest cities now known, dating from what we call the Old Empire, most of the standing edifices were erected between the third and the sixth centuries, A. D. These cities were not composed of compact blocks of dwellings, but they rather resembled the suburbs of our own cities with each house surrounded by gardens and lawns set with shade trees. The majority of the houses were built of wood or adobe and covered with thatch, so that but little remains today except small mounds of débris. The centre of the city usually was a large stone faced mound or acropolis, which

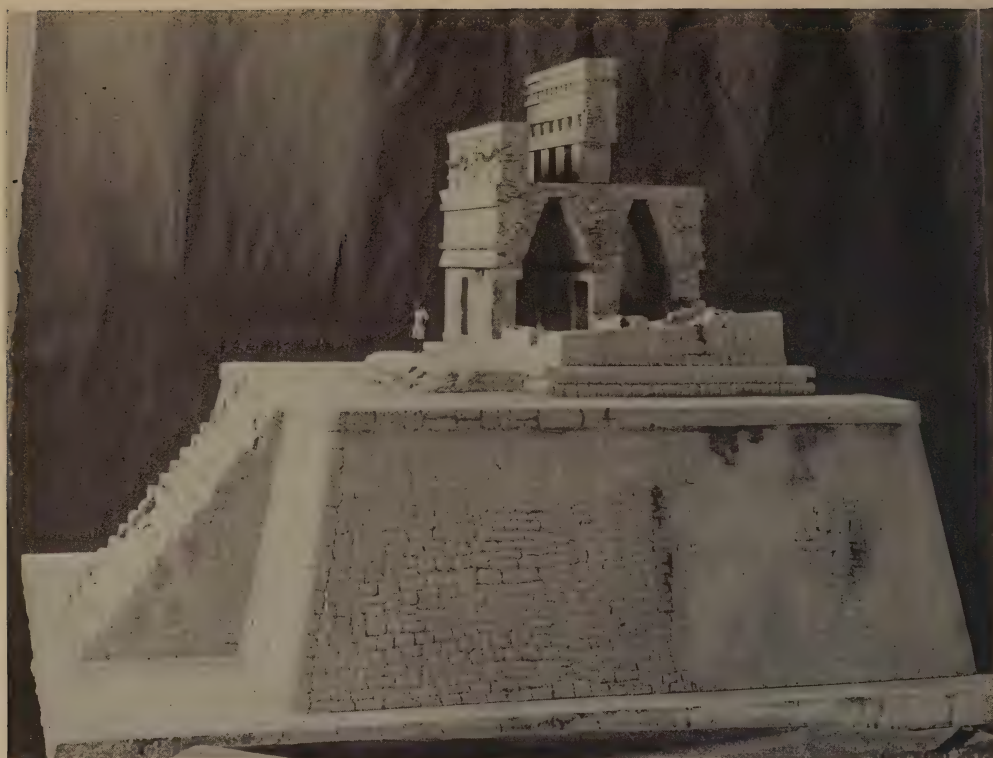


FIG. 10. MODEL OF THE RED HOUSE AT CHICHEN ITZA, YUCATAN
(Courtesy of the American Museum of Natural History)



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FIG. 11. PART OF THE NUNNERY AT UXMAL
(Courtesy of the Peabody Museum)



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FIG. 12. A CORNER OF THE NUNNERY AT UXMAL
(Courtesy of the Peabody Museum)

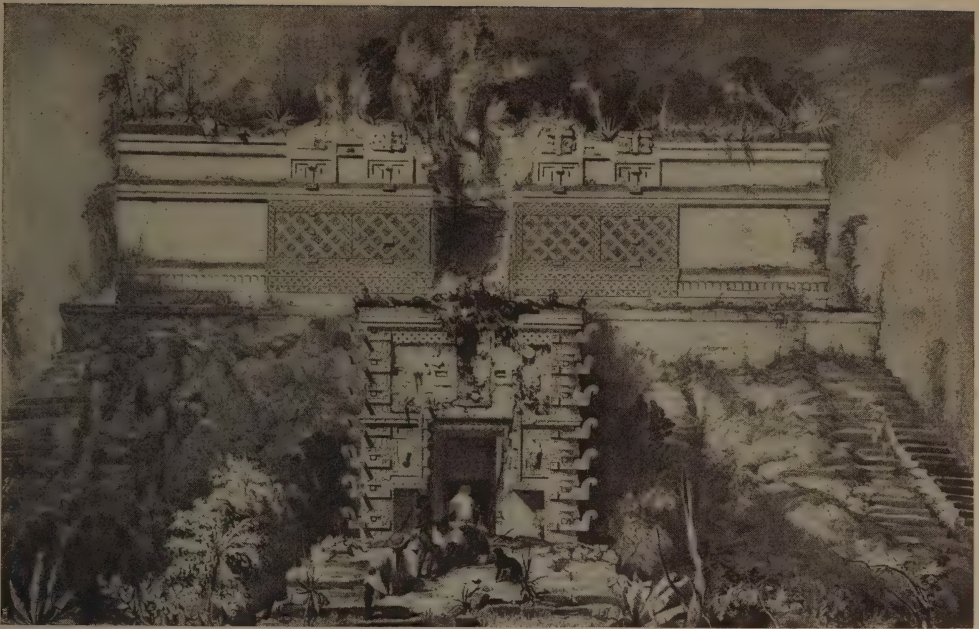


FIG. 13. THE HOUSE OF THE DWARF AT UXMAL, YUCATAN

carried on its summit the most important temples. Fig. 7 shows a small section of the acropolis at Copan. Around the acropolis was a series of courts, often stone paved, formed by various palaces and the less important temples. Such a civic centre may well cover half a square mile or more, and about it are grouped the houses of the common people, extending for several miles in every direction in the case of the larger cities.

Of the Old Empire palaces the most famous example is that at Palenque. It contains many courts and long galleries, and is boldly decorated with stucco relief and paint. In general, however, the large residences of this period have so suffered from the destructive tropical vegetation that little remains today but the lower part of the walls. The two storied palace at El Cayo shown on Fig. 5 dates from about 590, A. D.

Many examples of Old Empire temples are still standing, and there is much material available for study. The Tikal temple shown on Fig. 1 dates from about 300, A. D., and is today over 130 feet high, although the top has fallen. It is

the smallest of the five great temples found at this the largest of all Maya cities. The tallest of these today measures 69.7 metres or 226.5 feet, although the top of the roof comb has fallen. The Yaxchilan temple on Fig. 20 was erected about 500 A. D., and the Palenque temple on Fig. 9 was perhaps set up a few years later.

THE MAYA RENAISSANCE

Maya history, as we have said, is divided into two periods of brilliancy separated by several centuries. The cities of the second epoch were built for the most part at the time of the League of Mayapan (eleventh and twelfth centuries). They do not have one civic centre like the older cities, but rather a series of centres, usually in the form of scattered plazas or courts surrounded by temples and palaces. This corresponds to many of our own large cities, such as New York, which contain a number of contiguous communities, each with its own public buildings, shops, theatres, churches, etc. The temples of this period



FIG. 14. PYRAMID TEMPLE OF THE MAYA RENAISSANCE, LABNA, YUCATAN
(Courtesy of the Peabody Museum)



FIG. 15. THE HOUSE OF THE GOVERNOR AT UXMAL, YUCATAN
(Courtesy of the Peabody Museum)



FIG. 16. PALACE NO. 2 AT KABA, YUCATAN
(Courtesy of the Peabody Museum)



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FIG. 17. AN ANGLE OF THE FAÇADE OF THE PALACE AT LABNA, YUCATAN
(Courtesy of the Peabody Museum)



FIG. 18. THE GATEWAY AT LABNA





FIG. 20. TEMPLE AT YAXCHILAN, GUATEMALA
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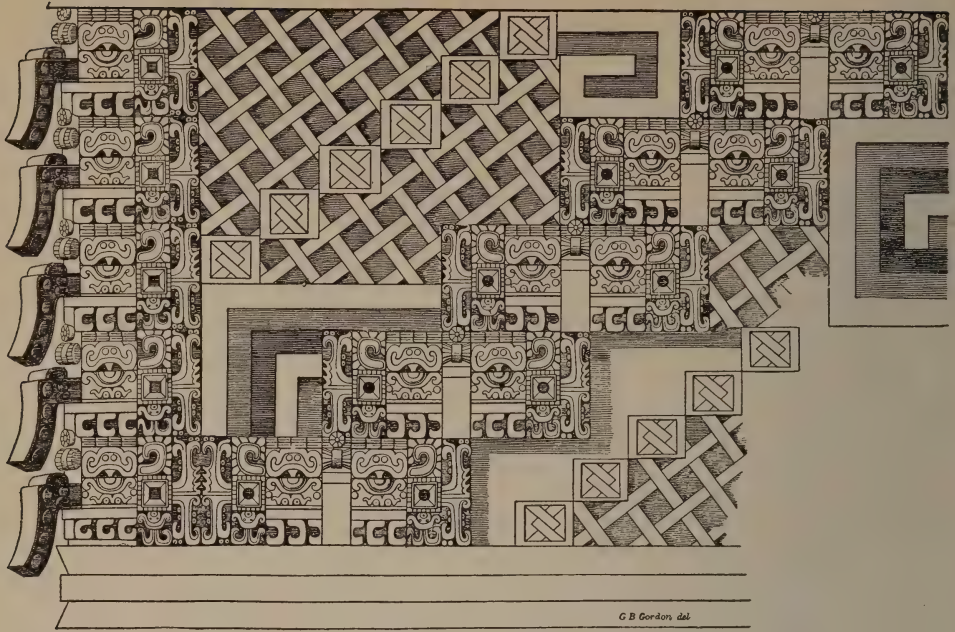


FIG. 21. DETAIL OF FRIEZE, HOUSE OF THE GOVERNOR, UXMAL

are not so imposing as those of earlier times, for their bases are neither as high or as steep. The Labna temple on Fig. 14 is presumably of this date; it is marked by a high false façade.

Palaces are common and really magnificent. The House of the Governor at Uxmal,* seen on Fig. 15, is over a hundred yards long. The exterior walls are covered with a most elaborate frieze, a detail of which we show on Fig. 21. It has been estimated that this frieze contains no less than 20,000 stones, each one cut and carved to fit its individual place, without the help of metal tools. The interior is divided into twenty-four rooms, two of which are sixty feet long. Set on a series of lofty terraces, the builders planned this edifice to form one side of a great quadrangle. Although this ambitious project remains unfinished, the building was indeed a regal palace for the princes of the Xiu, who once were

the lords of Uxmal. Fig. 12 shows a detail from the Nunnery, another great palace complex at the same city of Uxmal. An unusually simple palace at Kabah is seen on Fig. 16. The front wall of the lower range of rooms has fallen as well as the central staircase. Traces of the roof comb are still to be seen here and there.

Simple columns with square capitals divide some of the doorways. Fig. 17 gives a view of the angle in the façade of the palace at Labna (see also Fig. 8). The building rises in three terraces with ranges of rooms on each. A fine sculptured head projecting from the wide open jaws of a serpent appears in the centre of the picture. The gate to the courtyard of a second palace at Labna is illustrated on Fig. 18. One of the finest and best preserved Renaissance palaces is the Nunnery at Chichen Itza (Fig. 19), which still stands three stories high. As usual the builders dared not superimpose their rooms, so the upper ranges rest on solid cores of masonry. Our view shows but a small part of this large edifice.

THE TOLTEC PERIOD

With the downfall of the League of

*The more noteworthy edifices in the Yucatec ruins have received fanciful names from the early Spanish settlers. It must be remembered that most of these cities were in ruins when the Spanish landed as a result of the native wars. Such names as the Nunnery do not mean that the natives used a building for that purpose, but that the early settlers thought the building looked like a nunnery.

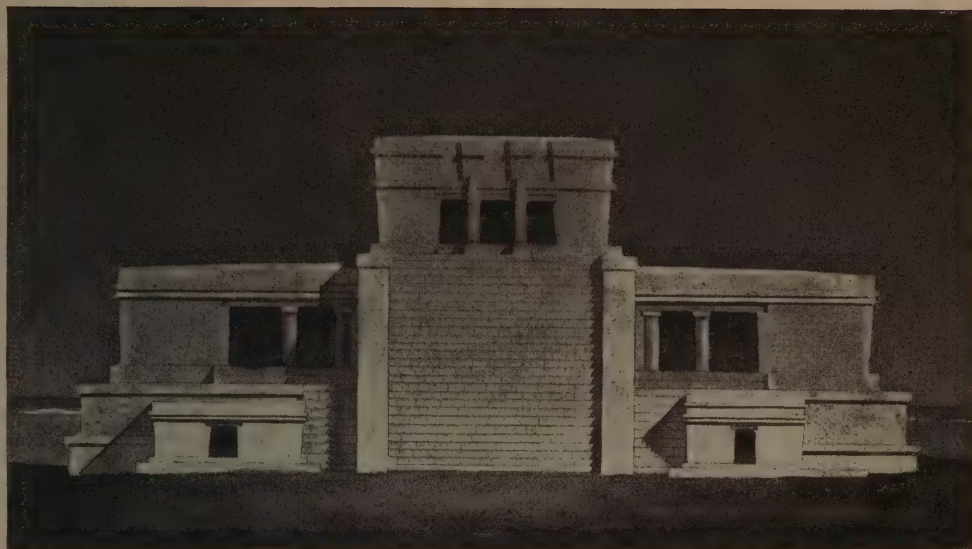
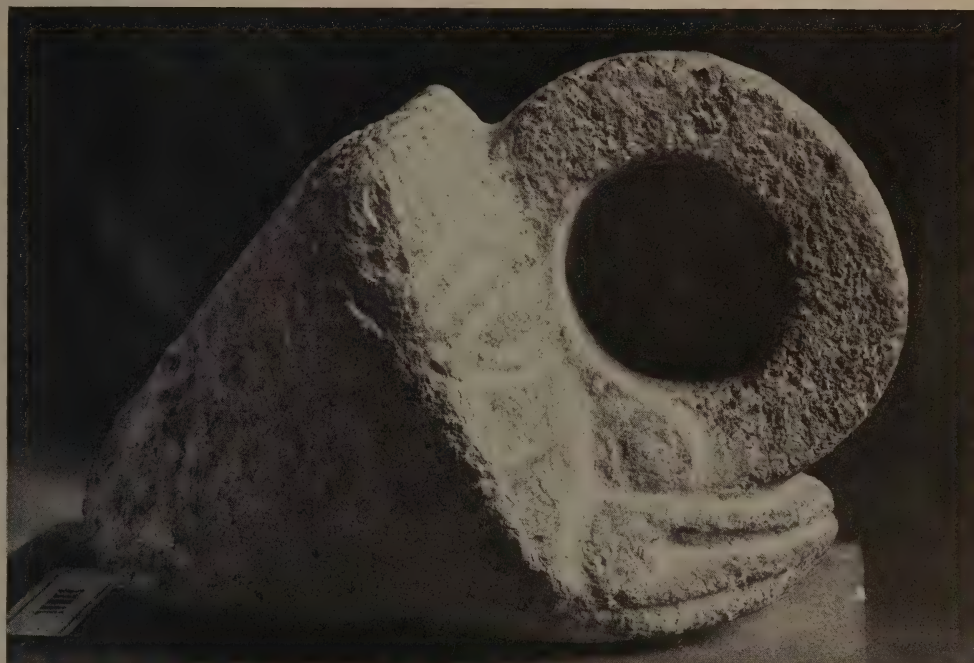


FIG. 22. THE CASTILLO AT TULUM

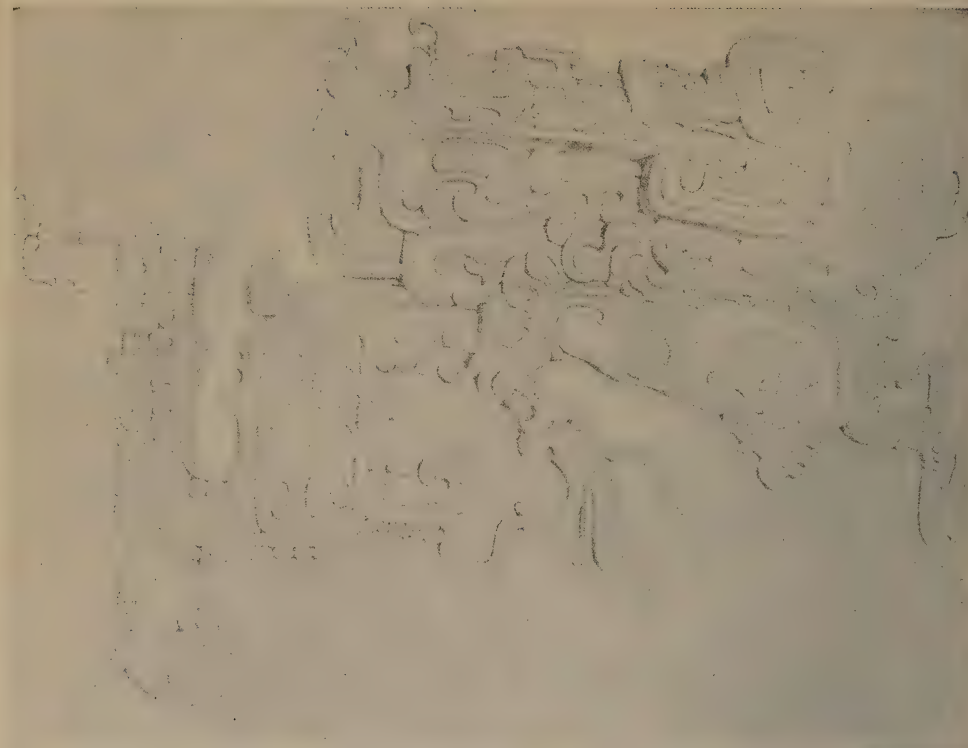
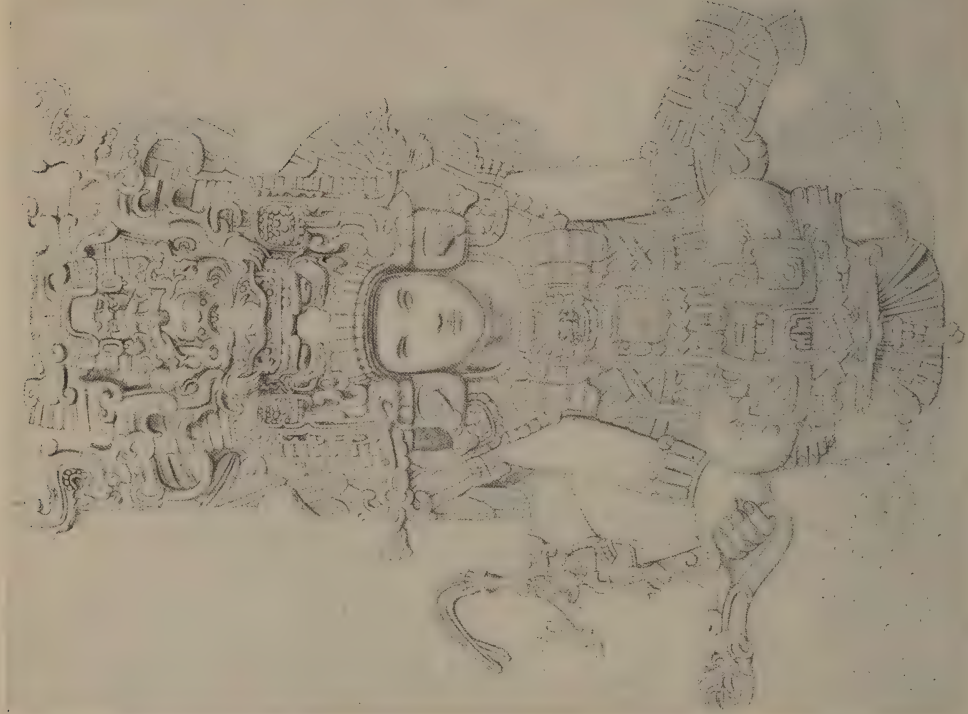


The Architectural Record

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FIG. 23. A STONE RING FROM THE BALL COURT AT UXMAL

(Courtesy of the Museo Arqueológico Nacional de Madrid)



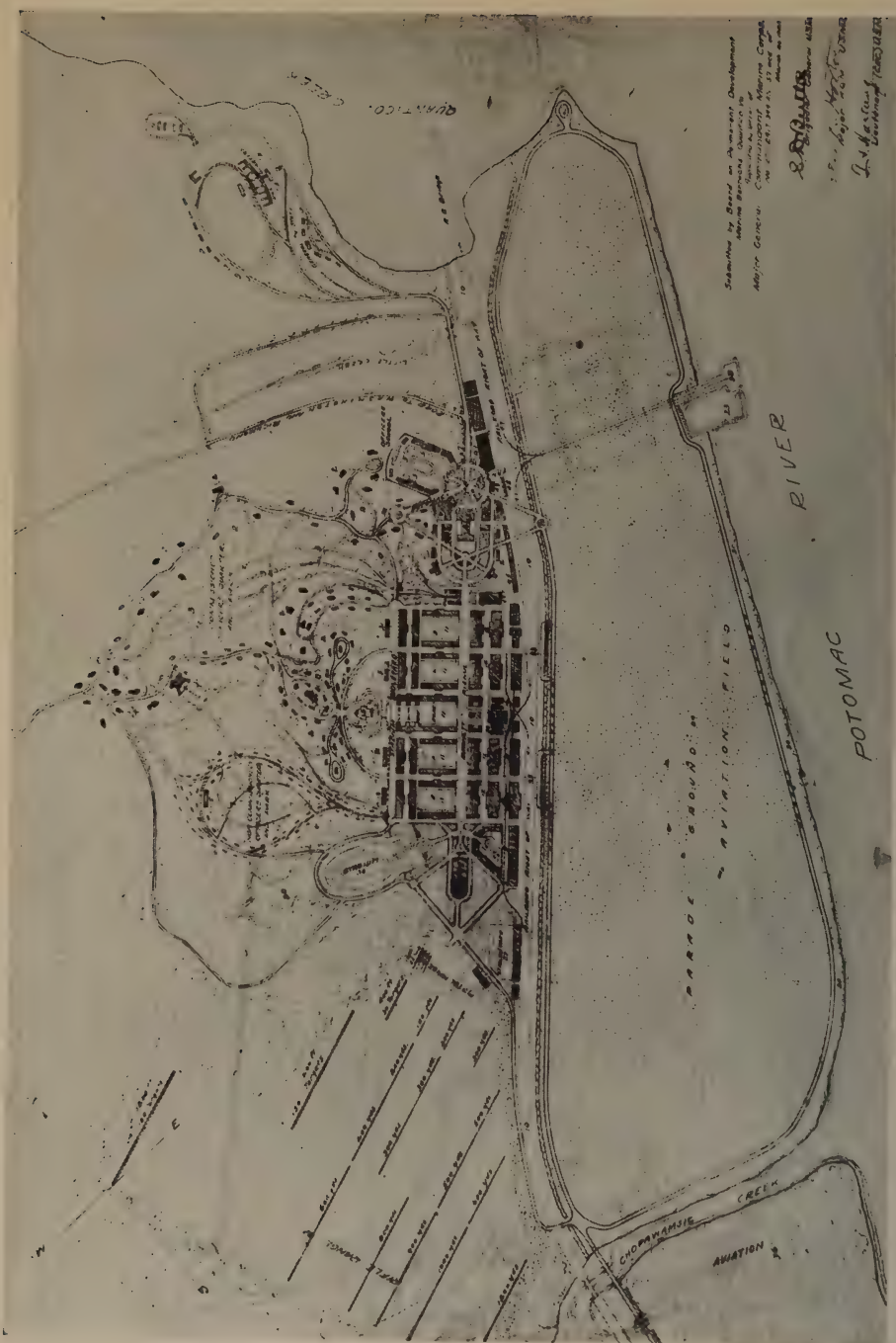
Mayapan we have seen that the Toltecs came into Yucatan from Mexico, and settled at Chichen Itza and elsewhere. In spite of the constant warfare of the succeeding centuries they found time to erect many magnificent buildings, which are marked by a peculiar style. One of the most important features that the Toltecs introduced is the serpent column. As seen in the heading design on page 491, the column is regarded as the body of a rattlesnake, the head of the snake forming the base, and the tail the capital. This feature is found chiefly at Chichen Itza, but it spread over to the east coast of the peninsula, where an example occurs at Tulum (Fig. 22). The Toltecs also altered the spacing of the mouldings and the type of façade decoration. Hence buildings which they erected are easily distinguished. A temple of this epoch, set on a large terraced pyramid which dominates the ruins of Chichen Itza, is shown on Fig. 2. The Castillo at Tulum (Fig. 22) is a simpler and more provincial building of a slightly later date.

A peculiar feature—also found in the highlands of Mexico, Guatemala, and Honduras—was introduced into Yucatan by the Toltecs. This was a ball court in which a game somewhat like our basket ball was played. The court itself consisted of two long parallel walls of masonry with a vertical stone ring set in either side, through which the players attempted to drive the ball. This was

evidently quite a feat, for the successful performer had a right to the cloaks of the spectators—if he could grab them before they ran away. The religious nature of these games is brought out by the fact that small temples stood on top of the walls at some of the courts. In Fig. 23 we illustrate one of the rings from the ball court at Uxmal, which was removed and taken to Spain many years ago.

Our survey of Maya architecture has only covered the high spots, for as yet but little is understood about the Maya civilization. The several hundred ruins which are known today are difficult of access, and investigation is costly when extensive clearing is necessary to permit even the taking of photographs. The picture we have drawn is furthermore incomplete because all the Maya buildings were once smoothly coated with plaster and painted in brilliant colors.

The Spanish explorers and conquerors have recorded but little of the barbaric splendor of the Maya, although the scenes which met their eyes must have rivalled even the wonders of Cathay and the court of the Great Khan. The once populous cities are now but forest-girdled ruins. Today the Maya Indian, devitalized by the loss of his religion and the extermination of his hereditary rulers, enervated by tropical disease, and brutalized by the vices of the white man, stands as isolated from the past achievements of his race as the *fellahin* of modern Egypt.



The Architectural Record

June, 1925

THE PROPOSED MARINE BARRACKS AT QUANTICO, VA

By Glenn Brown

ON MARCH 23, 1923, Maj. Gen. John A. Lejeune appointed a Board consisting of Brig. Gen. Smedley D. Butler, Maj. Jeter R. Horton of the Marine Corps and Lt. Theron A. Hartung, Civil Engineer, U. S. N. to report on Quantico as a permanent Marine base. This board on April 17, 1923, submitted a report describing the topography, the necessary sanitation, and the character and area of the required buildings. The present article has been prepared from data given in this report.

THE PLAN AND DESIGN.

The topography of the Marine Reservation gives an opportunity for a dignified and imposing installation of buildings and a picturesque and pleasing park treatment, allowing unexcelled views of beautifully wooded valleys and the broad Potomac river with the hills of Maryland and Virginia rising in the distance.

Coming up the river the Parade Ground would be seen as a broad and effective lawn sloping up from the river shore to the railway right of way. Beyond the railway the barracks would be seen rising up the hillside step by step. The mass would reach its highest point on the center axis of the barracks group where the church would emphasize the composition. The ground falls away from the church on either side by a gentle grade. This gives the top line of the barracks group a pleasing curved line against the background of wooded hills.

THE MARINE CIRCUS.

The entrance to the Marine Barracks is into a circle from which radiate streets leading to the officers' quarters, the parade ground, the educational unit, the barracks, the utility buildings and the sick quarters or hospital.

The everyday activities of the Post are grouped around the Circus. The buildings, in a circular composition, will give

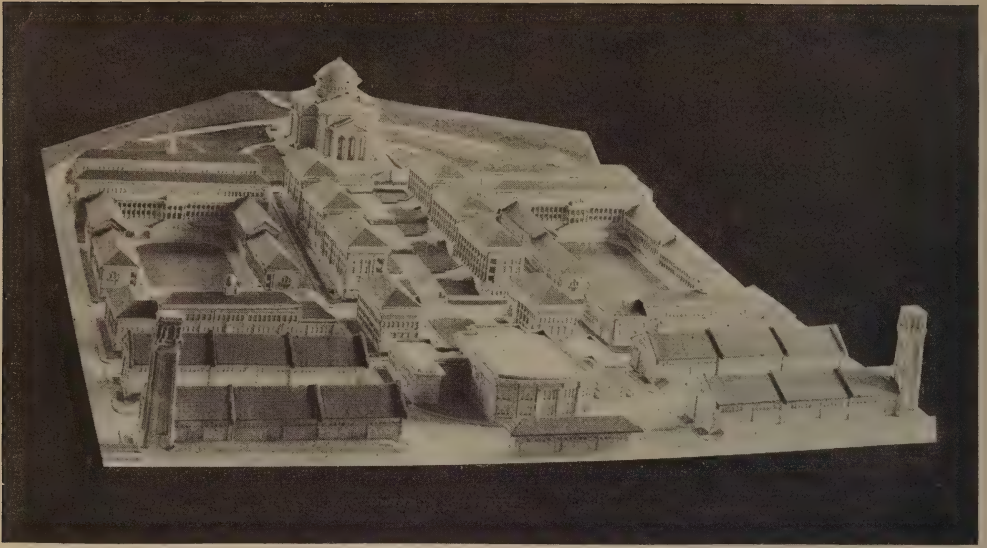
an impressive and dignified entrance to the Post. The Barracks being the largest and most important group around which the Post rotates, have been given a decided individuality. Dignity is attained by grouping each Barrack or Regimental Unit on a large quadrangular court around which the porches form a continuous encircling colonnade. These courts have an open end on Barnett Avenue, the principal thoroughfare. In passing through this Avenue one will see a series of open spaces 250 x 500 feet, encircled by classic colonnades, with lawns and border planting.

Standing in the center of the Camp the vista on Barnett Avenue will be closed at one end by the portico of the Armory, at the other by the porch of the Administration Building. At right angles to the Avenue one will look over an open court bounded by three-story colonnaded barracks to the Church situated on the highest point and to which there is a dignified approach up the hillside.

The Stadium, to foster outdoor athletics, is located south of the Barracks, where it nestles naturally in the valley. Being surrounded by forest, with its principal entrance intersecting Barnett Avenue at the Armory, it will present to all beholders a pleasing vista from this end of the main artery.

Northeast of the Barracks is located the Educational Group with the School on the top of the hill closing the end of a terraced quadrangle, on which are placed detached quarters for the instructors and apartments for the pupils. This group, opening upon the Marine Circus in connection with the circular composition of buildings, will give an imposing first view to visitors who arrive at the Post.

Sites away from the bustle of the Post have been selected for the Commanding Officer and Staff, as well as for the Sick Quarters or Hospital. The sites selected for these purposes are on the crest of



MODEL LOOKING FROM THE POST EXCHANGE TOWARDS THE CHAPEL

one of the highest hills, overlooking Quantico Creek and the Potomac River—most attractive locations and, while away from the Camp, are yet in easy access of the Marine Circus.

A picturesque wooded valley extends northeast of the Barracks, with an attractive stream winding its way through the low ground. Laurel, dogwood, white locust and azaleas thrive naturally beneath the native trees with which this valley abounds. It is proposed to park the valley with foot and bridle paths, thus giving short cuts from section to section.

On the ridges surrounding the valley the Commissioned Officers' Quarters will be located, allowing an opportunity for individual setting among the forest trees. A similar valley exists north of the Stadium. On the hills which surround this valley it is proposed to locate the Non-Commissioned Officers' Quarters. This valley when parked will offer a pleasure ground and playground for the benefit of both young and old.

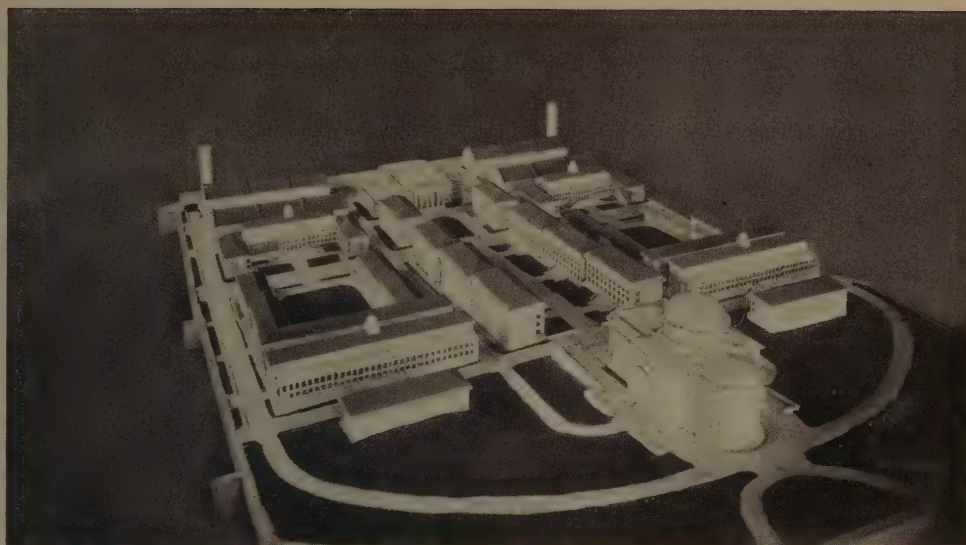
An attractive and useful feature may be readily added to the landscape by placing a water gate across the stream that runs beneath the Stadium field. This gate when closed, damming the water, would form a lake in the woods with its shore line changing constantly as it

wound around projecting hillsides and spread out in valleys and ravines. Such a lake would afford excellent canoeing in summer and a skating pond in winter, from one hundred to three hundred and fifty feet in width and twelve hundred feet long or thereabouts.

Another charming feature that may be mentioned will be the valley viewed from the Officers' Club Porch. From the foreground of the Club Terrace will be seen the valley with its slab stone walk in the center, open grass lawns on the hill-sides enclosed by natural forest, and, looking over the forest, a charming view of the Potomac with the hills of Maryland and Virginia in the distance. On the crest of the wooded ridges which extend from the Club House on either side of this valley, it is proposed to plant in their natural soil a profusion of laurel, dogwood, locust, rhododendron, azaleas, redbud, ash and other flowering trees and bushes natural to the woods, and, in addition, to supplement these native plants by a few foreign flowering trees and shrubs where background or important points need emphasizing.

THE ARCHITECTURAL STYLE.

Before adopting a style for the new buildings, their character was given careful consideration.



MODEL LOOKING FROM THE CHAPEL TOWARDS THE POST EXCHANGE

As the Spanish Mission style was appropriately adopted for the Marine Barracks in San Diego, it was thought proper that the prevailing Revolutionary Style, the so-called Georgian or Colonial style as developed in the thirteen original states, should be utilized for this post in the eastern part of our country.

The style seems peculiarly appropriate in Quantico, the section of Virginia where we find some of the most noted buildings of this character. The colonnade encircling the barracks quadrangle was suggested by the portico at Mount Vernon, the Armory portico by the big columns in Arlington, the church entrance by the Catholic Cathedral in Baltimore and the administration building entrance by the more delicate portico of the White House, each one of these features ending a vista from the center of the camp.

The Marine Circus is suggestive of the noted circular group of buildings designed by Charles Bulfinch for Boston after his studies in London.

The style adopted has advantages other than historical. It is simple in its lines and economical in its construction; it allows for the use of plain materials and little ornamentation; it calls for dignity and good proportion; it is thoroughly

typical of the straightforward service and life of the Marines.

PRESENT BARRACKS.

Some four thousand marines are now living in the temporary wooden shacks built during the emergency of war. The need of new quarters has been felt keenly as the present quarters have become more and more intolerable. For several years, under the direction of General Smedley D. Butler, I have, as other duties permitted, been making studies for the proper accommodation of sixty-five hundred enlisted men and four hundred officers. These studies cover a wide field: barracks, mess-halls, kitchens. Company and Regimental offices and stores; Commissary and Quartermaster warehouses; the machine, plumbing, carpenter's, painter's and tinsmith's shops; power, heating and refrigerating plants; warehouses for small and large guns, tractors, motor trucks and other odds and ends. The Post Exchange was a study in itself, consisting of a Department Store and branches such as barber, tailor and cobbler shops, restaurants, news stands, soda fountains and the Hostess House. The report provided for buildings, roadways, water supply, sewerage, drainage, heating and lighting; to house, feed, clothe, edu-

cate, train and entertain seven thousand five hundred men and four hundred and twenty officers.

Fireproof construction was recommended for all buildings except the detached officers' quarters, which were to be semi-fireproof.

BUILDINGS REQUIRED.

The Barracks are divided in five units for seventeen hundred and fifty men. Each unit is grouped around a quadrangular court with an open end on Barnett Avenue, the principal thoroughfare. Each group will consist of five separate buildings, two and three stories in height, three hundred and fifty feet long and sixty feet wide. The principal feature of these barracks will be the colonnaded porch two stories high which will encircle the 250 x 500 foot quadrangle. This porch is provided not only for the pleasure of the men in favorable weather, but is an important factor in an emergency by which the sleeping capacity of the barracks may be doubled.

The plan of the barracks calls for separate company dormitories, mess hall and storage warehouse.

Permanent, attractive Georgian dwellings have been erected for twenty-five officers. Additional quarters will be needed for two hundred and seventy-five officers, exclusive of those attending the school. These accommodations vary according to rank from that of the Commanding General, which is two stories high, containing living room, dining room, kitchen, store room, wash room, six master's bed rooms, four baths, two servant's rooms and bath, with ample cellar, attic and porch, to that of the Lieutenant, with living room combined with dining room, two bed rooms, one bath, one servant's room and bath.

For bachelor and student officers, apartments are proposed with from two to six rooms according to rank. One hundred and fifty non-commissioned officers need quarters about the size given for lieutenants. The Commissary, a large grocery and provision store, with its sales room and storage, and the Quartermaster's Depôt, a clothing, drygoods and

house furnishing store with its constantly changing freight, are placed on the Marine Circus where they will be convenient to the railroad as well as to the Barracks and the Officers' Quarters.

The Quartermaster will require for his needs two buildings 100 x 300 feet, two stories high; while the Commissary will need thirty-six thousand square feet of floor space.

The Hostess House, the Library and the Post Exchange are grouped together to give enlisted men an opportunity for amusement, study and a place to spend their pay. The Post Exchange is a Department Store; the Hostess House a temporary hotel, restaurant and dance hall; the Library, a reading and study hall. The theatre, with three thousand seats, is for movies, vaudeville shows, boxing matches and dancing. It is located so as to be convenient to men and officers.

The Marines are building a Stadium to seat thirty thousand with their own labor, excavating into the hills, filling the ravines, fabricating the steel carriages for seats, casting reinforced concrete treads for seats, collecting the stone and laying the masonry wall encircling the field. This is a large undertaking, about half finished, of which both officers and men may well be proud. The Stadium will have the largest athletic field in the country. The football field will not overlap the baseball field, the running track or the tennis courts.

Near the Stadium all the athletic sports are grouped. The most important of the group will be the Armory, 250 x 350 feet, used for an indoor drill hall, riding room and indoor major athletics. North of the Stadium field is placed the Team House, balanced on the other side by the Public Waiting Room; each will be 100 x 50 feet. The Team House will have separate rooms and lockers for the contending teams which visit here.

The Commissioned Officers' Club is a piece of construction which the Marines are doing with their own labor. On the Cornerstone is the inscription:

"Built by the United States Marines. They picked, shoveled and carted the earth. They quarried, cut and laid the

stone. They felled, sawed and framed the wood. They wrought, hammered and riveted the iron."

The Church is placed on the most commanding position on the center line beyond the Barracks. It is intended to accommodate eighty per cent of the force, six thousand five hundred men in close formation. The Transepts, Nave and Choir may be readily screened off for the service of the different religious sects for their regular services.

An educational group on one side of the Barracks gives a balance to the plan with the Stadium on the other side. This group is built around a large terraced quadrangle, 300 x 500 feet. The school with class rooms, study halls and administration offices has been located at the top of the hill. Detached dwellings for the teaching staff are proposed on the flanking sides of the quadrangle. The children's school, the dispensaries, the Post garage, Post Office, fire station and the brig have been placed where they would be most convenient for use.

The Laundry, Refrigeration and Cold Storage are provided for near the power plant adjoining the railroad right of way. Machine, plumbing, carpenter and paint shops for the Post maintenance and to serve as a part of the vocational training provided for enlisted men when they join the Marine Corps, will be placed along the railroad. Beyond the shops a stable is provided to accommodate one hundred horses.

A new administration building is called for in the new plan, as the present one, although a permanent building, has been found inadequate to accommodate the administrative branches of the Post, which should be for the best service, under one roof. It is proposed to make the present building into Bachelor Apartments. One hundred and eighty thousand square feet is required for regimental store houses in addition to that required for the Depot Quartermaster and the Commissary Officer.

THE CENTRAL POWER AND HEATING STATION.

Lieut. T. A. Hartung, C.E., U.S.N., studied and laid out a tentative central

heating and lighting plant and a sewerage system. These systems contemplate a progressive growth in proportion as the various sections of the station are brought into service.

A rearrangement of the rifle range, under the direction of General Butler and Major Keyser is shown on the general plan. The Marines have proved themselves the champion marksmen of the world and this rearrangement will thus provide them with an adequate range upon which to perfect themselves.

It appears that there is no drill ground in the country adequate for training large bodies of troops. At Quantico it is proposed to devote to a parade ground the area between the railroad and the river, bounded on the north by Chopawamsic Creek and on the south by Quantico Creek. This tract approximates half a mile wide by two miles long. It gives an area upon which a division could manoeuvre and at the same time supplies a much needed field where a large number of airplanes could practice in mass manoeuvres.

ROADWAYS.

The system of roads centers in the Marine Circus which is the entrance to the Post by highway from Washington and Richmond, from the railroad by the station and from vessels by way of the pier. From the Marine Circus branch Barnett Avenue, the main artery through the Barracks ending in the Armory on the south and the Administration Building on the north; Potomac Avenue, which leads to the Officers' Quarters and the Pier; a new avenue which leads to the Parade Ground and the Educational Center. Parallel to Barnett Avenue, bounding the Barracks on the west, is the proposed site of the Stadium Boulevard. This will provide another main artery particularly useful on field days of major athletic events. This boulevard crossing a valley on a viaduct from the Officers' Quarters will continue around the Stadium, connecting with the Aviation Roadway.

The Stadium Boulevard viaduct is proposed as a series of simple concrete

arches, making an attractive entrance to the Officers' Park.

Second and Fourth Streets, the principal cross streets, pass from the Parade Ground, under the railroad track, through the Barracks, and rising up the hill by elliptical curves, merge at the Church to form a single road which leads direct to the Officers' Quarters.

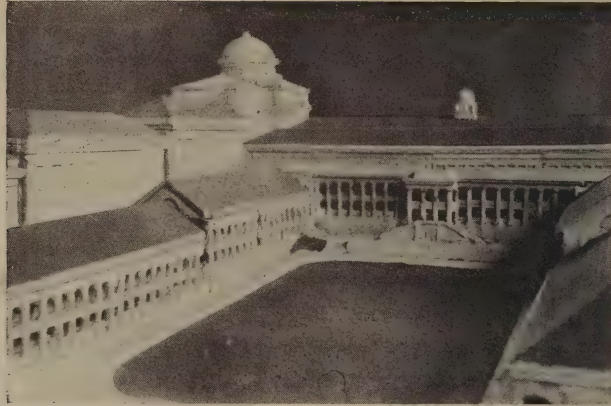
The crossings from the Barracks to the Parade Ground under the railroad are important features of the proposed roadway system to allow ready access between the Barracks and the Parade Ground free from the movements of trains. At

least two such subways are needed to prevent congestion.

A roadway will encircle the Parade, which in addition to its utility purpose will form in all seasons an attractive drive along the river shore.

The topography of the country and intercommunication between the sections of the camp have been considered in the roadway system.

The report gives a detailed account of each building with the cubical contents and estimate per cubic foot of each, with an estimate for heating, lighting and sewerage, etc., per unit.



MODEL VIEW FROM BARNETT AVENUE—ONE OF THE QUADRANGLES

P O R T F O L I O

C V R R E N T , A R C H I T E C T V R E



RESIDENCE OF JAMES BYRNE, ESQ.
A. Wallace McCrea, Architect



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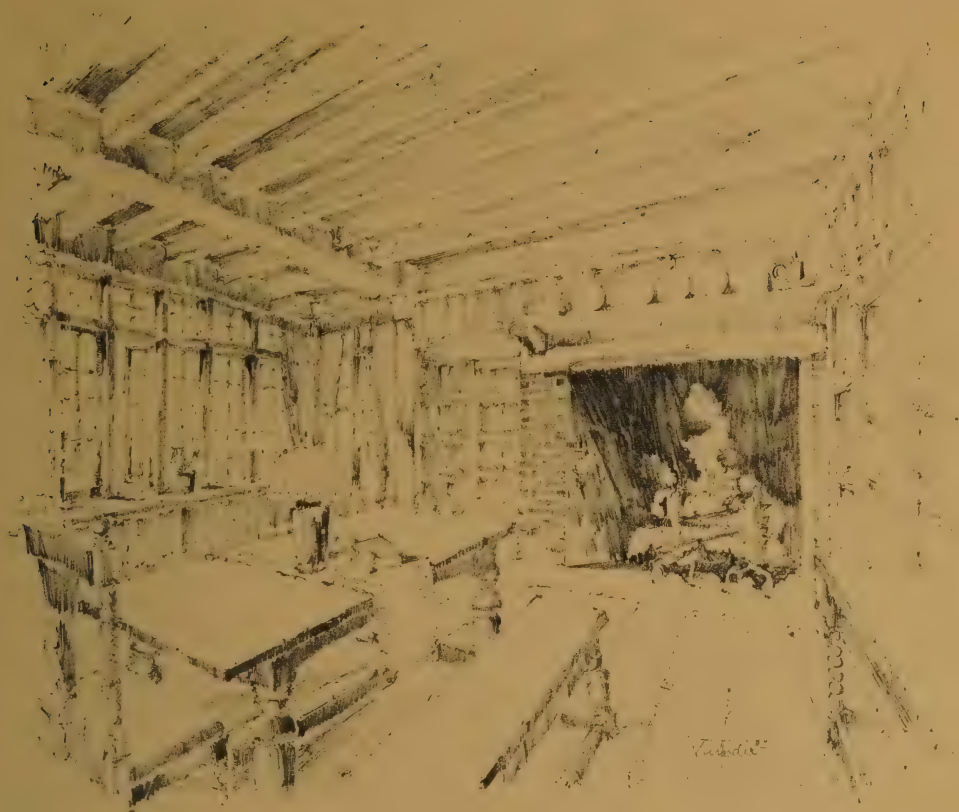


RESIDENCE OF JAMES BYRNE, ESQ.
A. Wallace McCrea, Architect

RENDERINGS

BY

EDWIN H. LUNDIE





HOLTON & JENNE
ARCHITECTS

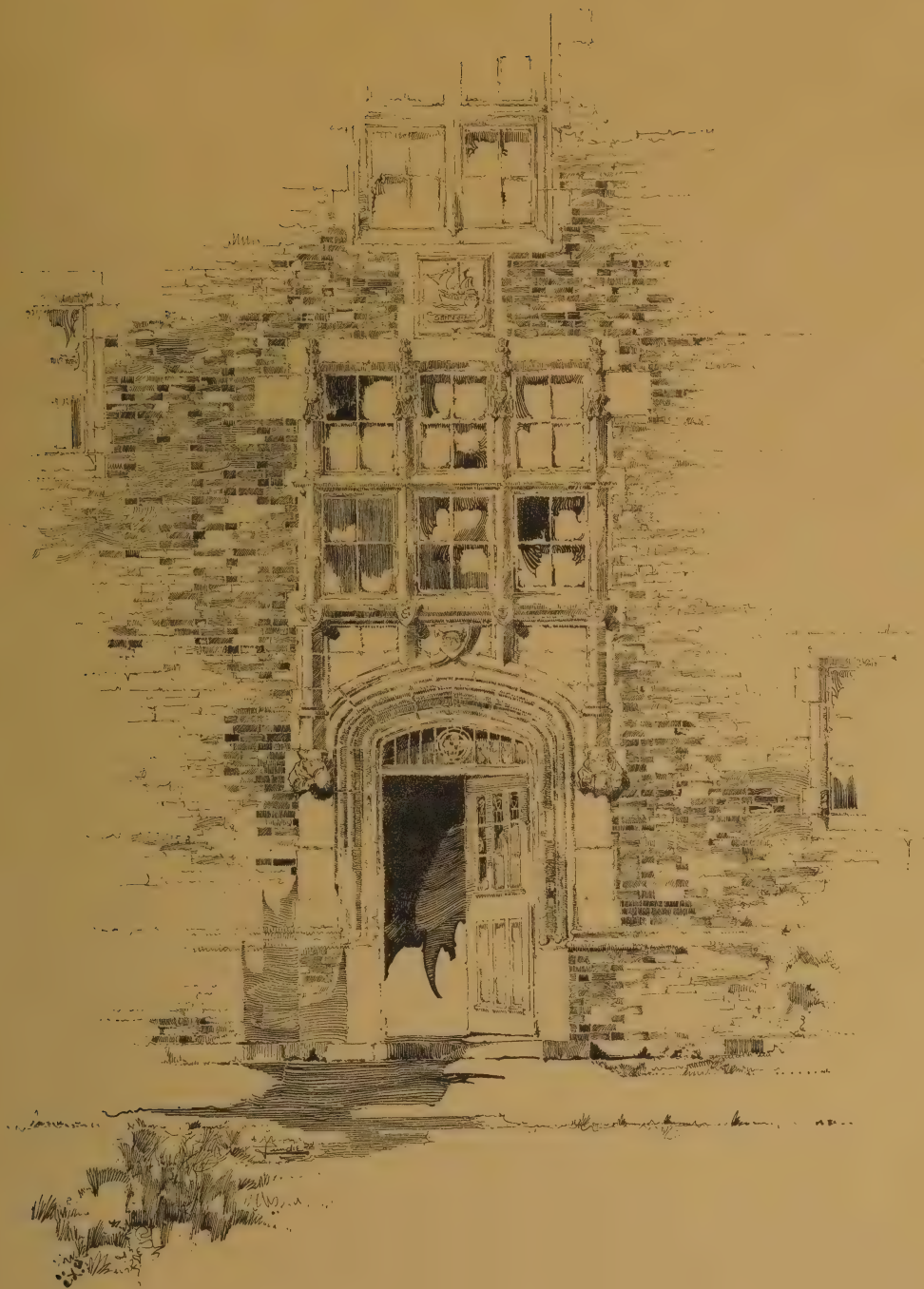








Sketch Elevation
Saint Catherine's
Chapel.
College of St Catherine
H. A. Sullmold Architect







ALBI—VIEW FROM THE PONT NEUF

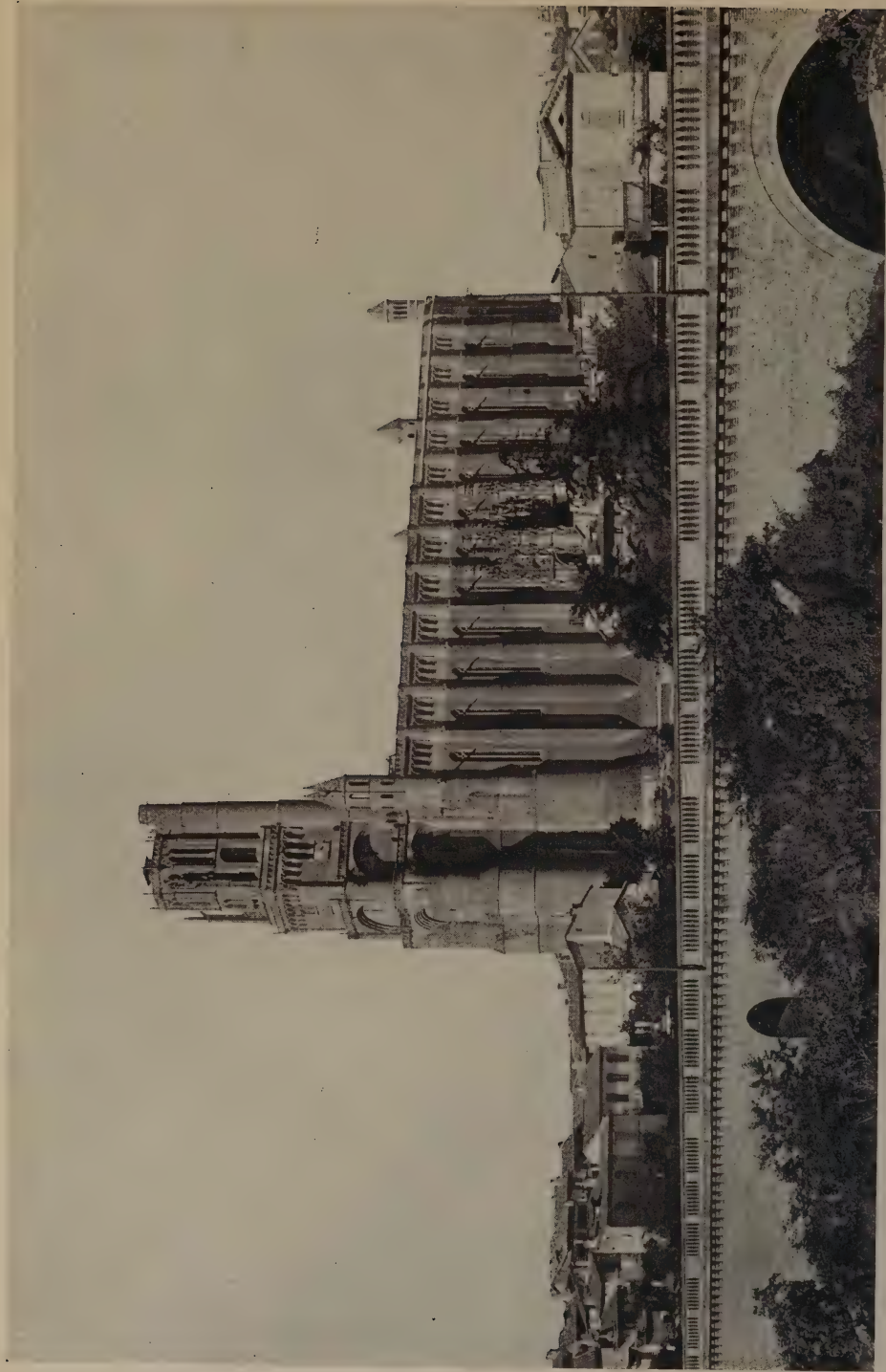
ALBI — A MEDIAEVAL TOWN

By

Aymar Embury II

IF WE CONSIDER France as one great museum of architecture then the town of Albi, one of its rarest gems, is preserved in an inaccessible wing. Were it possible for the curator of France to shift the objects around in his museum, Albi would most certainly be placed in the showcase opposite the front entrance, but since it is not possible to change an exhibit which is hemmed in by mountainous walls, the architect who wants to see Albi must take one of the little narrow gauge railways at five or six in the morning and spend four hours in going forty miles to get to the town, but the sight of the towers of Albi rising up at the end of his journey is worth any amount of trouble.

Of the many exquisite towns which ornament France, Albi is perhaps the most arresting, a fact which is partly due to its site and partly to the peculiar individuality of its architecture. Like most little French towns it is situated on a river, in this case the Tarn, which may be described as "slightly navigable" as far as Albi, and like most French towns of its age, it was at one time strongly fortified and still retains traces of its fortification. It is an old town; most towns in France are old, but this is one of the oldest, and in its museum are Gallic antiquities which antedate the Roman occupation. The first mention of the town under the Roman Empire appears in the Fifth cen-



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THE CATHEDRAL OF ST. CECILIA, ALBI

June, 1925



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THE ARCHBISHOP'S PALACE, ALBI

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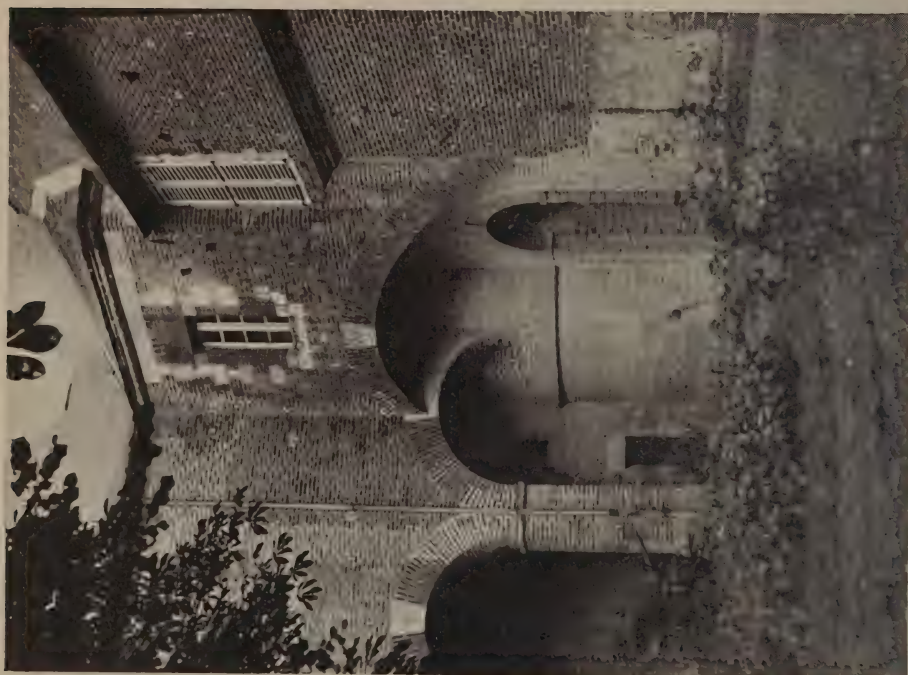
DOOR OF THE MAISON ENJALBERT, SIXTEENTH CENTURY, ALBI, FRANCE



The Architectural Record

June, 1925

A STREET IN ALBI, FRANCE



The Architectural Record

A CORNER OF THE ARCHBISHOP'S PALACE, ALBI, FRANCE



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PORCH OF THE CATHEDRAL OF ST. CECILIA, ALBI, FRANCE

tury, in the notices of the Empire as "*Civitas Albigensium*," and as a Christian town it was made the seat of a bishop in the third century under Saint Claire. In the course of the last sixteen hundred years it has slowly grown to a population of nearly twenty-five thousand.

Owing to the peculiarly inaccessible position of the Cevennes, it has not figured largely in the history of France, although one of the greatest events of the religious history of the Midi during the middle ages takes its name from Albi—the wars of the Albigenses, fierce religious wars of persecution, and the subject of Milton's noble sonnet beginning:

"Avenge, O Lord, thy slaughtered saints,
whose bones
"Lie scattered on the Alpine mountains
cold;"

Toward the middle of the twelfth century the many abuses apparent in religious affairs, the corruption of the clergy and the scandalous conduct even of the Pope led to the formation of various religious bodies who were determined to reform the church. These bodies had as their center Albi; they became known as the "Albigenses." Against them was directed in 1179 the most terrible of the religious weapons—general excommunication, which not only cast them out of the pale of the church, but carried with it the confiscation of their property and put them below the beasts of the field in that they might be freely killed by anybody. Active steps were not immediately taken because the protectors of the Albigenses included some of the most powerful nobles of the Midi, but in 1208, one of the Albigenses assassinated the Pope's legate as he was about to direct particular excommunication against the most important of their chiefs, Raymond VI, Count of Toulouse. The Pope, infuriated by the assassination, ordered a crusade against the Albigenses. This was carried out as if the Albigenses were less than heathen; an army of fifty thousand crusaders, actuated partly by religious zeal and partly by a desire for spoil, carried fire and sword through the devoted country, killing in the year 1209 more than sixty thousand of the inhabitants regard-

less of age, sex or even of religious faith, the Pope's legate instructing the crusaders to "Kill everybody—God will recognize his own." In 1217 the courageous but cruel captain, Simon de Montfort, Count of Leicester, an Englishman, was given command of the crusading forces. Aided by monks of the Dominican order instituted in 1215 to exercise the power of the "Holy Office of the Inquisition," he caused the destruction of many more thousands of people, among whom were numbered both heretics and faithful.

Still another crusade commanded by the son of Philip Augustus of France took place in 1219, which practically wiped out the remainder of the population so that the very name of the Albigenses disappears from history toward the end of the thirteenth century. A few of the sect, however, having fled into the inaccessible valleys and mountains of the Cevennes persisted under the name of "Vaudois" and these account for a not inconsiderable proportion of the Protestant population of France even at the present time.

In the course of these wars most of the ancient buildings were destroyed, certain portions of the church of Saint Salvy, built in 942 by the Bishop Miron and the Abbé Gausbert, being the only recognizable remains. In spite of the succeeding waves of slaughter which surged over the city, those of the inhabitants who remained retained their fierce and turbulent spirit, and Albi is almost unique in mediæval history as a town in which the people revolted time after time against the rule of their bishop. Such revolts resulted in the great cathedral of Saint Cecilia and the noble bishop's palace (which remain the glories of the town) being built not as open meeting houses for the inhabitants of the city but as strong castles to defend the priests against the assaults of their parishioners.

It is probably these two buildings with their vigorous military character which mark the town as different from all others in France. The city itself is fascinating enough, but, dominated by these tremendous piles of brick, almost unrelieved by stone decoration, the aspect is of an unsurpassed picturesqueness from any

part of the surrounding country, and especially from the opposite bank of the Tarn.

To those familiar with the rest of France the town seems as if it were part of a foreign country. The general character is certainly Italian or Spanish rather than French. The narrow, winding, sharply sloping streets are bordered on both sides by tall houses with heavy overhanging eaves and tile roofs, and very many of the houses have the uppermost stories open to the air on both sides so that a

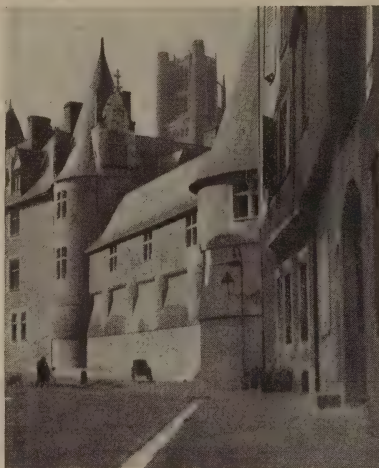
sort of veranda is formed where clothes are dried in the winter time and where the families sleep in the summer. Although some of the houses are of stucco or of stucco with brick ornament and trim, the mass of the city is of brick—brick of a peculiar sandy pink color, and as all the roofs are of tile of the same color, the town appears to be overhung by a tawny haze. Piling up as it does, a great orange mass against the brilliant

blue southern sky, it is the color as much as the architecture of Albi which astonishes and delights the visitor. And the series of wonderful pictures it presents from all sides does not, as is often the case, lose interest when one enters the streets themselves. Albi fulfils its promises. The steep crooked streets of the old town are full of interesting buildings, one after another, and many have unusual beauty of design and are magnificent in execution. The old church of Saint Salvy has an entrance door and a tower of extraordinary character, and among the private houses there are in Rue Timbal two gems of Renaissance architecture, the Maison de Guise and the Maison Enjalbert. The Maison de Guise was built by Roger de Raynes between 1528 and 1532; the comparatively low street façade with its curious dormers has been seriously in-

jured by the show windows built into the first story, but the old courtyard with a two storied open loggia on the left and the dummy windows on the right, retains its ancient appearance. It is of an uncommon type of Renaissance architecture, extremely heavy, following no set rule, decorated almost to the point of over decoration and yet with a peculiar personal quality such as few houses of more regular design possess.

The Maison Enjalbert is an example of

brick filled half timber, the half timber liberally carved and the door one of the richest pieces of wood carving in France. While these are two of the most interesting, every little street has something worth looking at, and it does not pay to neglect any of them in passing; for example, the narrow entrance back of the church of Saint Salvy leads into the Place de la Cloitre, where an arcaded first story supports buildings of various heights above, making one of the quaintest imaginable



THE ARCHBISHOP'S PALACE,
ALBI, FRANCE

little squares; and always wherever one wanders one sees rising at the end of the street, above the roofs of the houses, the enormous tower of the cathedral or the almost equally enormous keep of the bishop's palace.

It is hard to say exactly how much of the bishop's palace remains, and it is equally hard to say how much of it is in its original condition, because, like all structures occupied for a long period of years (it was begun in the XIIIth century) it has been frequently altered, added to, torn down and rebuilt, and no records have remained. Unfortunately no photographs can give any impression of the tremendous size of the building. Perhaps that one of the photographs which most nearly shows its size is one taken on the interior of the court showing the staircase tower of the main keep; and this

photograph includes less than half, perhaps not more than a third of the height of the building. The material is almost entirely brick and unrelieved except for occasional window trims of stone, with few and small openings, yet the enormous brick surfaces are so broken up by towers, buttresses and reinforcement piers that the building is neither stupid nor ugly and gives the impression of terrific power and enormous strength. Its beauty is not that of a flower, but rather that of a splendid locomotive; and the manner in which arch is sprung from arch and arch from tower to tower is unique in architecture. The people who built Albi were masters of



COURTYARD OF THE ARCHBISHOP'S
PALACE, ALBI, FRANCE

brick work such as no country has had since Roman times; apparently they found no form difficult to construct in brick, no weight which their brick arches could not hold.

The bishop's palace is rather a series of buildings than a single structure. Erected at various times over a period of 600 years, it still has a feeling of unity, due in part to the use of the same material in all structures and in part to the preservation of the same scale throughout the entire construction.

Of the cathedral one can speak only in superlatives. It is perhaps the most enormous single mass of brick work in the world and is unique in design. There is open ground for controversy as to whether Rheims or Amiens or Canterbury or Beauvais or Milan is the most beautiful Gothic cathedral in the world, but with these Albi cannot be compared any more than it can be compared with the Renaissance cathedrals of Italy. It is a solitary example of its kind: the cathedral

of Albi and nothing else. The building was of course executed in the Gothic period and must be included in the list of the world's great Gothic structures, but it bears none of the customary features of the Gothic school except the vaulting, the ambulatory, and the great north door. The approach is a curious one—by a sort of inclined stairway, passing under a portcullis of beautiful carved stone supported at one end by the cathedral and the other by a low brick pier. The doorway is a projecting porch almost square in plan, of stone magnificently carved and (for a Gothic work), gigantic in scale, without loss of the fine quality of Gothic architecture. The great

stepped tower of the cathedral, supported on small towers like legs with arches thrown between them, resembles no other in the world, and the whole structure is so enormous in scale and yet so thoroughly in harmony with itself that the effect is one of impressive grandeur. The interior is simple in form but enriched to a degree only surpassed by Chartres in the rood screen and the screen between the ambulatory and the choir. These are of no soft chalk stone, like most of the cathedrals in France, but of a hard white granite, and the daring of the sculptor or stone cutter who could cut forms of such lace-like delicacy from a material so hard and brittle will remain always the admiration of the world. Yet appreciation of its splendor is of modern times, for a description of the building given by an old French writer more than a century ago, reads as follows:

"The construction of the cathedral at Albi goes back to the end of the XIIIth century; begun in 1277, it was not com-



MAISON DE GUISE IN RUE TIMBAL, ALBI, FRANCE

pleted and consecrated until 1480. It is three hundred and forty-eight feet long and one hundred and two feet wide. The architecture is of the simple Gothic style with pilasters.

"This is the interior arrangement of the church; two side entrances, a choir closed in not only by columns and grilles

as in the churches in the north of France, but also by a sufficiently high wall; a great altar facing the choir; chapels all round the nave and the choir.

"The church seen from the exterior offers only a mass of a sufficiently sad appearance. It is entirely built of ruddy brick. Its tower is only remarkable for



COURTYARD OF THE MAISON DE GUISE, ALBI, FRANCE

its height. It is composed of two towers joined one to the other by a wall without any ornaments—”

This writer goes on to quote another traveller:

“The town of Albi has not found favor with the witty writer who has preserved to us the story of his walking trip from Paris to Bagnières. ‘Albi,’ he says, ‘is certainly the ugliest archiepiscopal town that exists in France without even excepting the very ugly archiepiscopal town of Bourges. It is necessary to have practiced on the pointed pebbles of the pavement at Rodez so as not to fall down on the pavement at Albi. The streets are a little less narrow than at Rodez and it is not so common to see the upper stories invading the domain of the streets, but all the houses are of brick, which makes their aspect somber and sad. The Tarn in front of Albi is a very much boxed in river. Its

waters are ordinarily clear and limpid, but in flood and after rain it becomes red like the brick. It is the color of the ground and of all the neighboring hills.”

Apparently the same diversity of opinion which makes horse races extends to architecture.

The man who wrote this description belonged to the time when mountain scenery was considered offensive to a person of good taste. It was the era when the delicate and febrile style of Louis Seize was evolved, and grandeur and nobility in architecture or character were alike condemned as belonging to the lower classes. Yet it is curious to find even in that day one so little capable of understanding the splendor of the little city of Albi. To the student of Gothic architecture, it will furnish a new chapter for his studies, and to the artist it will remain a series of unforgettable pictures.

THREE CENTURIES OF AMERICAN ARCHITECTURE



By Fiske Kimball

AN ADDRESS BEFORE THE NEW YORK BUILDING CONGRESS, MARCH 11, 1925

THE OLD VIEW of the three centuries of American Architecture was that they represented a steady degeneration—that in the Colonial period the work was rendered very original, as compared with English work, by the difference of materials; wood in this country being the primary material. The idea was that with the Revolution and the classical inspiration which came after it, there was a dearth of traditional craftsmanship and art, and that a steady decline set in, which lasted more or less until the present day. Even the work of the latest period was not excepted, because it was felt that a great deal of it was borrowed from the earlier styles, and represented a disguise or veneer to hide or cover up the actual facts of construction.

This view was the outgrowth of a very definite point of view, essentially that of Ruskin and William Morris, who exalted the expression of material and the pride of handicraft as the supreme merits in architecture. The nineteenth century was so completely under the domination of the conceptions of science, including especially the conception of biology as to adaptation of forms to environment and function, that it did not realize there was anything in the art of building except such conformity to practical and structural requirements and those of material.

We do not depreciate those merits for a moment, but we realize that they leave untouched the specifically artistic merits. Ruskin denied there was such a thing as beauty of proportion or beauty of abstract form. He certainly was incapable of recognizing the beauty of any building that was not richly adorned with precious materials or with figure sculp-

ture embodying a religious inspiration. He could not, of course, admire the buildings of the Renaissance; he could not admire the buildings of Rome, and very naturally he could not have admired the old or the modern examples of American architecture.

I need scarcely say that I do not subscribe to that view of the three centuries of American architecture as a process of degeneration. I would like to present them under a little different light. I do not think even the interpretation of the early period was the correct one. After all, in the Colonial period down to the Revolution we were Colonists, we were provincial. England was home, the thirteen colonies were so many shires of rural England. The shires of rural England differed from one another in their buildings as they differed from the work in the capital. The work in America differed from the work in the capital and the other English shires as much as they differed from one another—and little more. At that time in England there was still a great use made of wood. At that time in America there was a large use already made of brick and stone. I do not see any fundamental difference there. The more we study English buildings the more we find that almost every feature of the Colonial style was the stock-in-trade of the minor English buildings of that time, and did not involve fundamental originalities. It was provincial work that followed the styles of the home country with as much modification, and no more, than the different phases of that style at home.

The Revolution brought a great change in the American point of view. The

fathers of the Republic were eager to slough off that provincial dependence, to throw off colonialism. They wanted to do that in language—that was what Noah Webster's dictionary meant. They wanted to do it in art; they had a man who knew something about art, a great deal about art, and he was the author of the Declaration of Independence, Thomas Jefferson. He wanted to make an artistic Declaration of Independence as well. He was qualified to do it, qualified first by his encyclopedic mastery of all the arts and sciences through books, and he had the finest library in the colonies. He had an architectural library which would shame many offices today. Secondly, he was qualified to do it by his long residence in Paris, the center of all arts.

We have not thought very much, in thinking of the patron saints of the profession of architecture and the art of building here, of Jefferson as one of those. He was our first Paris-trained architect. I have to laugh sometimes at the students, recently returned from a year or two there, who depreciate Jefferson's ability in architecture. He was there five years, and one has only to read his pocket account book to see that no week passed, and scarcely a day passed, without his systematically visiting the buildings. He consorted with Clérissseau, with Legrand and Molinos, who were among the leading architects of the times. He consorted with these men not merely as a learner but as an equal.

He came back to America with the idea—indeed, while still abroad he formed the idea—of turning American architecture into a broader channel. Perhaps we do not all approve of just the channel he chose, but we must respect his choice under the conditions. He wanted to render American architecture more than a mere copy of contemporary foreign styles—even the French that he admired so much. He wanted to have the respect of the foreigner but not to copy him.

He turned for his inspiration to the monuments of Rome. He was the real author in America of the classic revival, one often so greatly reviled, yet which we will find, I believe, to be a movement

responsible, even today, for much that is best in our work. He wanted to turn American architecture into a monumental channel that would be worthy of these new independent states, soon welded into the great and powerful nation of the United States. He had an unequalled opportunity to carry through such an architectural program—an opportunity that any architect would envy. He was successively Director of the Public Buildings of Virginia, Secretary of State charged with the responsibility for the building of the city of Washington, Vice-President, President, and Rector of the University of Virginia. In every one of those positions he took an active interest in building. He designed the Virginia capitol, the first great monument of the classical revival in a strict sense either abroad or here. We think of the Madeleine at Paris, built under Napoleon's inspiration in 1807, as the greatest affirmation of the classic in modern art. The Virginia capital was designed in 1783. Jefferson wrote the program of the competition for the Capitol and the White House, and he submitted a design for the White House anonymously at a time when people thought that no worthy designs were coming in. He gave official patronage to the first *professional* architects, men of the finest training, such as Stephen Hallet, an *architecte expert juré du roi* who came here with the French Revolution; such as Benjamin Henry Latrobe, who was able by his personal stamina to overcome the hostile forces by which Hallet was borne under, and who established the first professional office of an architect in the United States.

In his building of the University of Virginia that movement reached its crown. It is a superbly-disposed group of magnificent classical buildings, dominated by the great rotunda—a group which has been the inspiration of the finest university groups of later times, such as Columbia and the New York University group. He furnished the basis for that ingrained love of the austere, dignified, refined and chastened in architecture that underlies the spirit of contemporary work today.

A welter of new influences bore that movement down in the midst of the nineteenth century, and it was momentarily obscured, but it rose again in a marvelous new birth in the work of the generation immediately preceding and following 1900.

I wonder if we realize how solely American was the genesis of that neo-classical revival which we associate here with the names of McKim, Mead & White. There was nothing comparable to it going on abroad at the time. It was not a movement derived from contemporary European artistic movements. I do not think it is to be regarded as a survival of the eclecticism of the nineteenth century, which was ready to choose from all styles, classic being one. It was rather an affirmation of a new unity of style. It used classical elements, to be sure; nevertheless it was not merely imitative, but based on the classical spirit of form: unity, uniformity and balance. That is one of the two great phases, I think, of contemporary work in America today. It is the foundation that was given it by the early classical work of the Republic that has made the movement a national one, made it vital.

Its adoption abroad was very much later, but it is now becoming a world movement. The French came over in 1893 to laugh at the plaster colonnades of the World's Fair in Chicago, screening buildings that were hastily constructed of wood and steel. They adhered to the old view; they did not realize that there was another phase, the one of formal beauty, which could be independent of construction, as it was often in the old days; but they went back to Paris and in 1900 they fronted their exposition buildings with classical colonnades. If that was not American influence, I don't know what was.

The English have been the first and most generous to recognize American initiative in this field, and the chorus of praise that followed the erection of the Bush Building in London was an acknowledgment that in architecture, American supremacy was won. The British colonial work in Canada, Australia and New Zealand, which they showed at their

Empire Exposition in London last year, was American in its style.

I do not want to neglect the other phase of this wonderful American development in architecture, and that is the economic and structural phase, because that is of enormous importance. The nineteenth century was looking for new achievements with new materials. Steel and glass were modern materials. They were tried in the Crystal Palace. They were tried in other sporadic instances, but the fact was that in Europe conditions and problems had not changed enough to call forth a great new structural system. It took a new continent, a new society, and a new country to do this—and that was America.

In the great new cities of Chicago and New York, commercialism and industrialism developed unrestrained by the hampering restrictions of the old European city. Exploitation of urban land placed a premium on going into the air. There was evolved that new type—the high office building. Perhaps Chicago had the most to do with this type at the very start. William L. B. Jenney, so far as I know, first devised the modern steel frame carrying the walls. Louis Sullivan was the first to give it artistic form in his Wainwright Building in St. Louis, and in his Prudential Building in Buffalo. The Wainwright Building looks modern today—it was designed in 1890, far earlier than European attempts to do something on the same lines.

Louis Sullivan felt that to be modern he had to eschew all historical forms. He was a child of the nineteenth century to that degree. But he was superior to his theory, and his buildings stand today the test of unified form quite as much as they stand the test to which he himself subjected them—because he was a great artist. I do not believe that the only way to treat the sky-scraper is to reveal on the exterior the lines of the structural frame, and when you come down to it, Sullivan did not act on that principle. The Wainwright Building and the Prudential Building have a uniform appearance of piers on the exterior—two to an office. Actually there is only one steel

pier to an office. Every intermediate one contains no steel, and yet is treated in just the same way. He was superior to any rigid theory. He imposed on a heterogeneous problem a unified artistic form. There are no fundamental differences in style, in my opinion, between his buildings and the buildings of men of different convictions as to forms of detail. There is no fundamental difference between the treatment of his buildings with vertical lines and vertical stripes in the twenty years from 1890 to 1910, and the treatment we have today in the great Fifth Avenue apartments and the Federal Reserve Bank and so many others. There we have the return to masonry, because after all the enclosing wall, the curtain wall, is masonry, and stone is the finest material for a wall, as it always has been. There, there are horizontal cornices, and horizontal belts, and horizontal lines.

All those buildings, those recent examples that employ classic forms, are not copies. Every foreigner realizes that he has never seen anything like them before. The buildings are fundamentally novel and original, the product of American tradition and the fruit of American style. Call it the American Renaissance if you like. It is not merely a rebirth of something old and dead, but is vitalized by the novel elements of American economic life and a new structural system. There has not been a new structural system such as the steel frame invented since the Gothic was invented. It is the greatest structural achievement since the invention of the Gothic vault and the erection of the Gothic cathedral. You can say, if you like, that the American office building is a cathedral or temple not to God, but to Mammon. Two or three centuries later, looking back at the great works of the past, no one asks to whom the temples were erected. They *look* at them, and they see an achievement unparalleled since the erection of Rheims, and Chartres, and Beauvais.

The spirit that has come into the design of these new buildings with the structural system of steel, has been the spirit of order and uniformity and balance.

That was fostered by Jefferson, the classical revivalist, and then by Wells and McKim and White, the neo-classic revivalists. The great American office building would not be what it is today if it were not for the spirit of form that was developed in the low buildings of traditional construction that were erected here in the early days of the Republic and the last years of the nineteenth century.

The zoning regulations which have put a premium on broken masses did not necessarily produce that composition of mass which we see and admire today. It might equally well under different conditions produce a picturesque variety of massing, the continuation of what we see, let us say, in the old Waldorf. Take the Shelton, which many people think of as an affirmation against the classic—it is one of the most classic buildings in New York, because it is centralized in the up-building of uniform masses, of the utmost geometrical simplicity. The essential thing in it, the classic thing, is that balance, and that geometrical simplicity, bounded by unbroken lines of the simplest geometrical form. The building that is most like it is the Pharos of Alexandria, but I do not suppose that example ever entered the head of the designer. With its fellows, the Shelton may stand as a wonder of the modern world as the Pharos did of the ancient.

Collectively, these buildings are enormously impressive. I do not think it is irrelevant to emphasize their picturesqueness as a whole, even though Manhattan as a whole was not designed, except by the play of economic forces, building in a great pyramid on the preferred commercial locations. Neither were many of the older cities—Florence, for example. Half the beauty, half the magnificence of the old was the picturesque result of accident and external forces such as ours. Who will deny that equal achievement has been made? Foreigners will not deny it. They testify to it, diplomats, journalists—Lord Curzon, Birkenhead; architects, men who know a great deal about it—Atkinson, and Richardson, and other Englishmen who are coming here to study

architecture. There has been established in the Royal Institute of British Architects the Bosson scholarship to send annually a fellow of the Royal Institute to study architecture in America.

The balance of international trade in architecture has turned, and well it may. These men come up the Bay, and they see that wonderful man-made mountain cleft through by Broadway, and they go over on Columbia Heights at night and look at that fairy tower of lights and fairy city. No wonder they go back to say that something new has appeared under the sun in America.

Now I am not an indiscriminate glorifier of things American. I cannot see that our achievement in the other arts is comparable or equal to what we have done in architecture. That is perfectly natural. Few nations have ever made a uniform achievement in all the arts. There was a great art in Holland, at the period of its world supremacy, and that was the art of painting. England, when

it achieved its world supremacy, in the eighteenth century, created a new and great art which was known as landscape gardening. Everyone recognizes that was their greatest contribution and achievement. The great achievement of Rome was the art of architecture. The Romans were practical people. This does not mean they were not artistic, but that they embodied their artistic feeling in the practical channel of architecture. The same may be said of our own country, America. To me it appears very natural that America is the country to take the lead in modern architecture, and that architecture should be the great artistic expression of America.

I believe that, looking back a century hence, the achievement that has been made right around us here on Manhattan, symbolizing American architecture, will be regarded not merely as one of the wonders of the history of art and of architecture, but as one of the crowns of human endeavor.



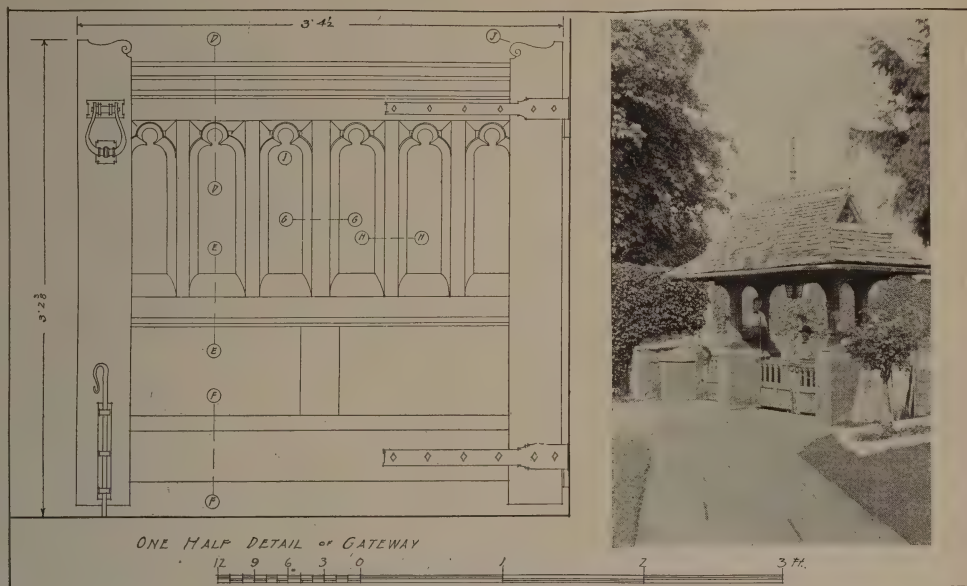
— The — ENGLISH PARISH CHURCH AND ITS DETAILS

By
Robert M Blackall
Measured Drawings and Photographs by the Author

THE LYCH GATE OF THE CHURCH AT ADDERBURY IN OXFORDSHIRE, ENGLAND

The lych gate of the church at Adderbury in Oxfordshire is modern, having recently been built to replace one decayed with age. It is in the Gothic style, perhaps a little ornate, but being an entrance way to a Gothic church it is in

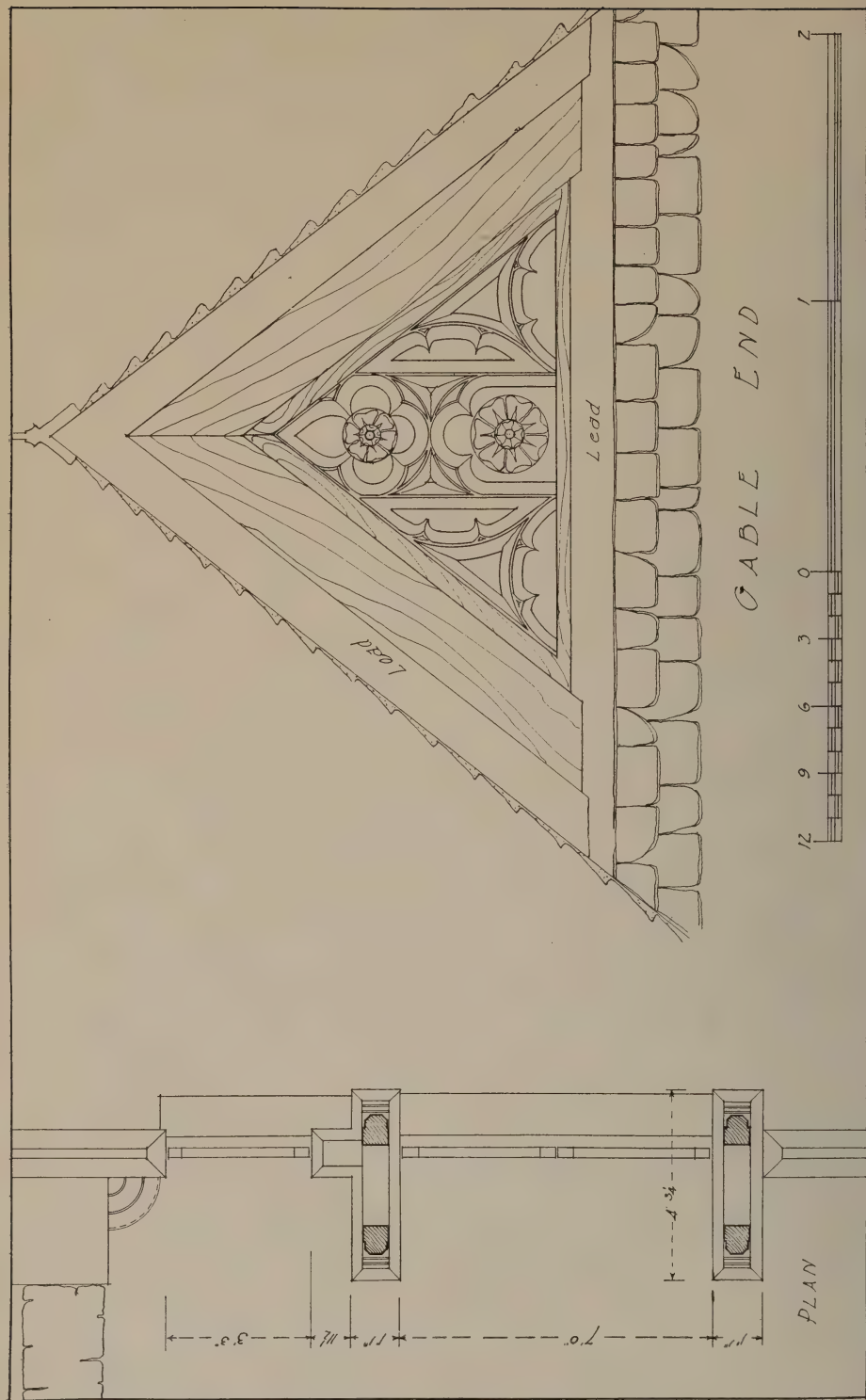
keeping with the latter structure. In plan this lych gate is unusual as there is no enclosure with the usual seat, so that it simply serves for a shelter under which one could spend a few minutes before going into the church. The lower part is made of field stone smoothed with a hammer, the upper part is carved wood work. The roof is covered with very thick slate.

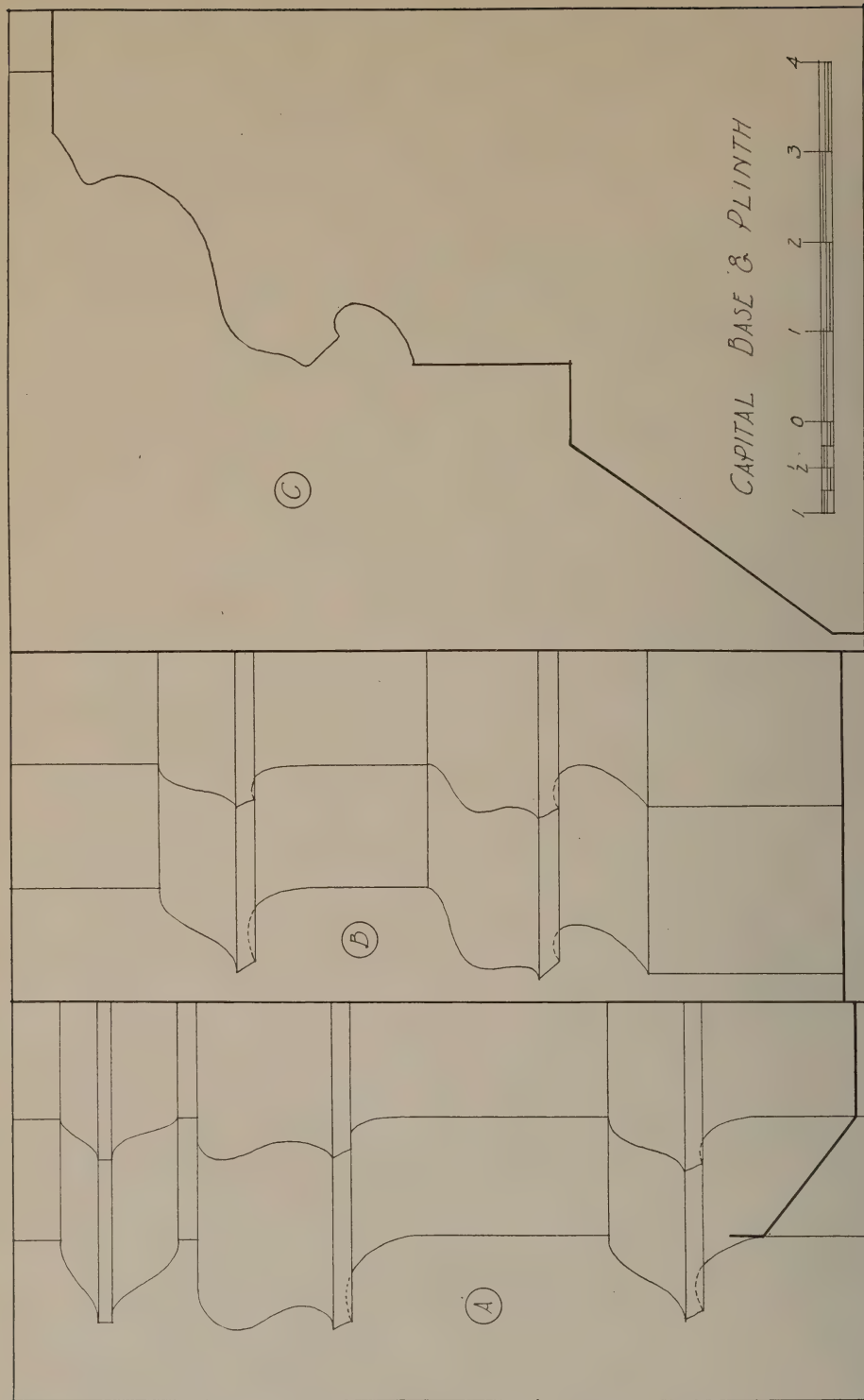


Lych Gate

CHURCH AT ADDERBURY, OXFORDSHIRE, ENGLAND

Measured and Drawn by Robert M. Blackall





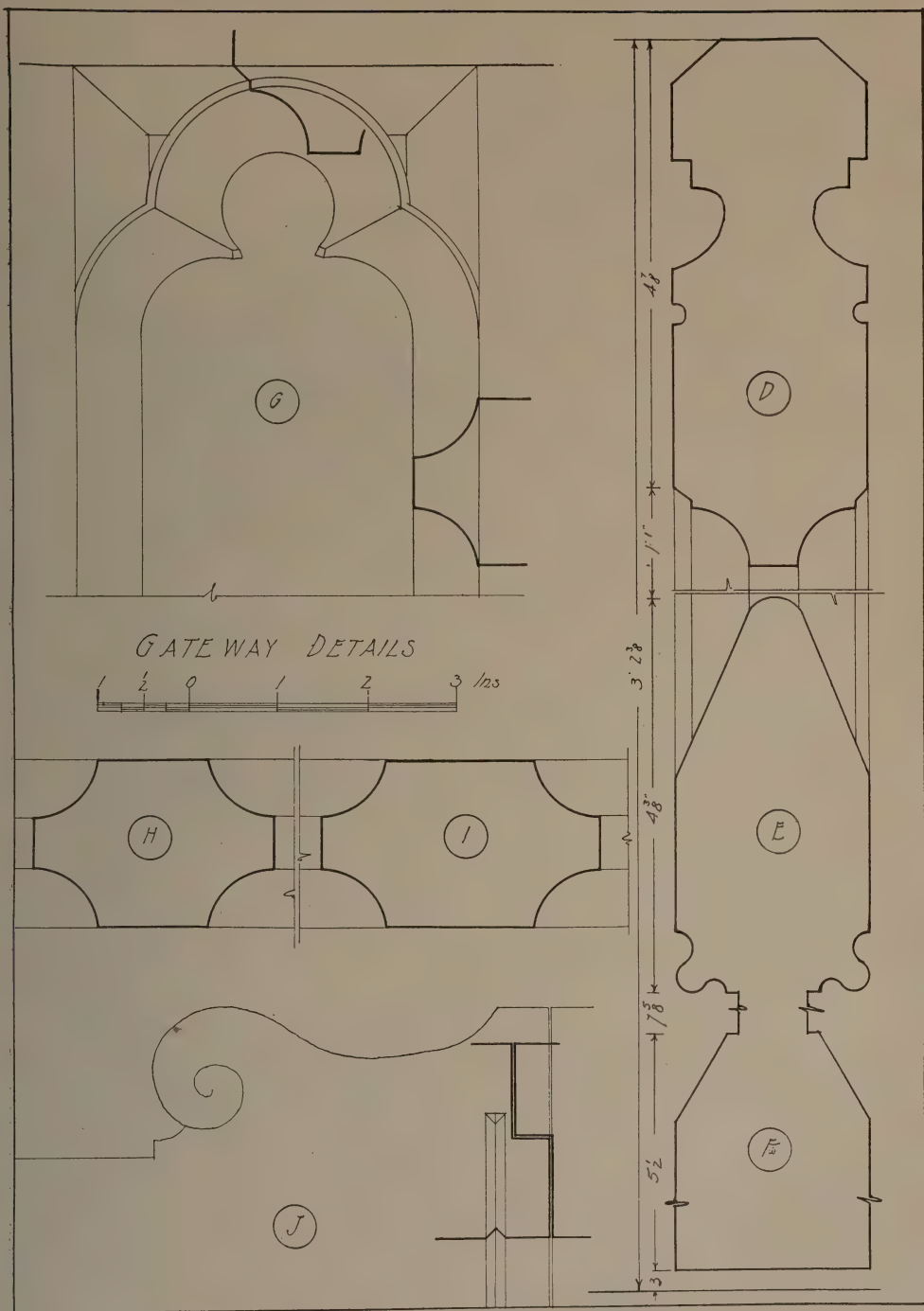
The Architectural Record

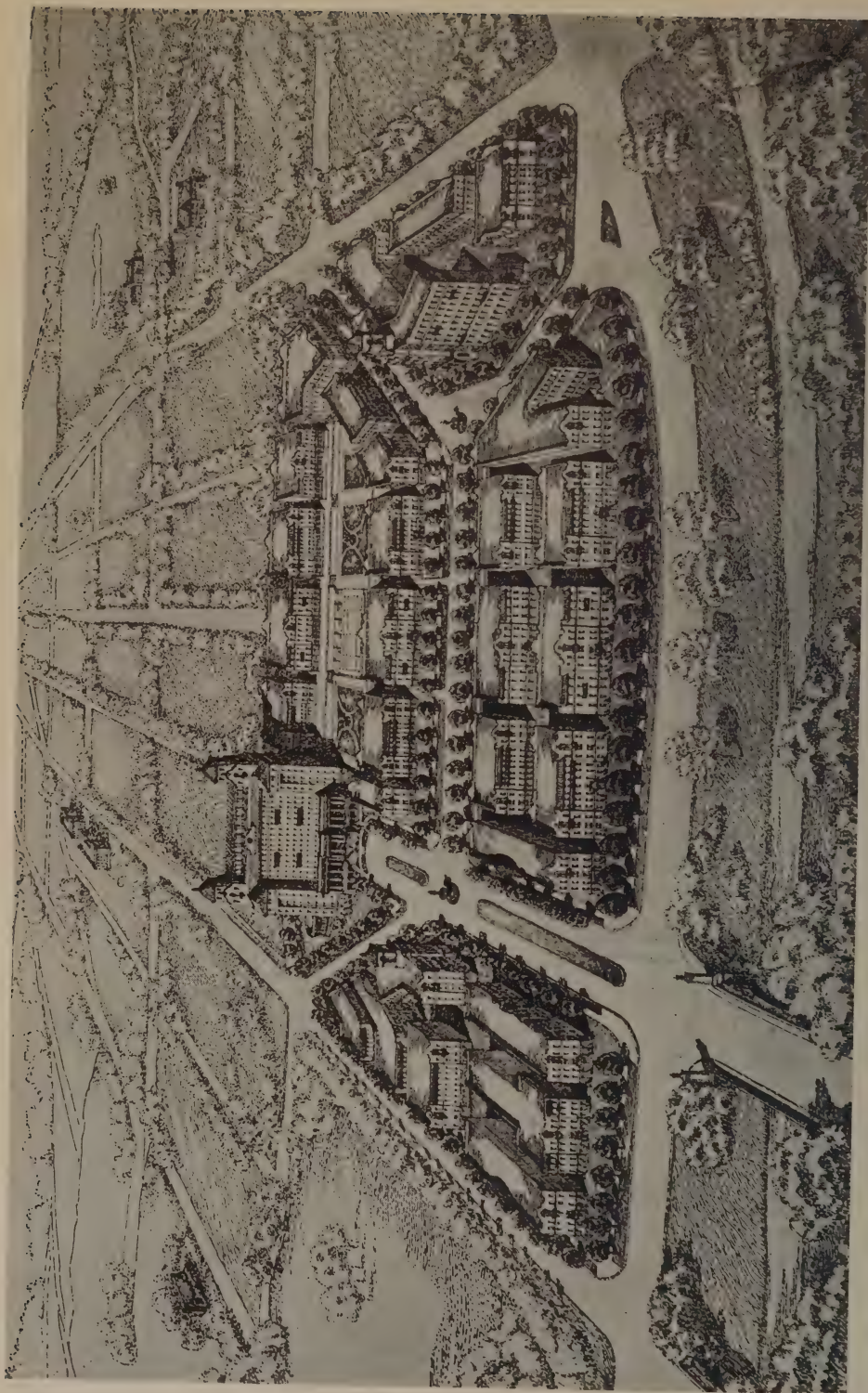
Lych Gate

CHURCH AT ADDERBURY, OXFORDSHIRE, ENGLAND

Measured and Drawn by Robert M. Blackall

June, 1925





The Architectural Record

FIRST PRIZE PLAN FOR NEW SUBDIVISION IN COUNTRY CLUB DISTRICT. KANSAS CITY, MISSOURI

June, 1925

FIRST-PRIZE PLAN *for* NEW SUBDIVISION IN COUNTRY CLUB DISTRICT, KANSAS CITY, MO

A.W.Hertz, N.L. Wilkinson and R.E. Grans
— *Associated Architects* —

A RATHER UNUSUAL architectural competition has been recently conducted in Kansas City, Missouri, by the J. C. Nichols Development Company and has been participated in by a number of the local architectural firms.

For the past fifteen years this company has been developing the Country Club District of Kansas City, which has become noted as one of the largest restricted residential areas in the United States. Within the three thousand acres covered by this development the finest homes of the city are now included. Having built up this great residential section, it became a necessary part of the program of the operating company to supply nearby shopping centers for the convenience of the community. For this purpose limited areas at strategic points were reserved within the district itself.

The most important of these shopping or business sections is situated at the northern extremity of the Country Club District and lies between this district and the remainder of the city.

Just to the south of this business district and separated from it by a parkway and water course, is situated an irregular tract of land approximately fifteen acres in extent. This property lies on a hillside sloping upward from north to south eighty-eight feet in a width of four hundred and sixty feet and from east to west thirty feet in a length of twelve hundred feet.

The tract is bounded on the north, east and west by arterial highways and will be directly connected to the business center by means of a new bridge and roadway built across the intervening parkway so as to give that section the full benefit of any expanded trade which would naturally follow an increase of population in the surrounding territory.

The object of this competition was to discover the best solution for the devel-

opment of this unimproved tract of land into a restricted apartment house area, providing a scheme to house at least one thousand families within its boundaries.

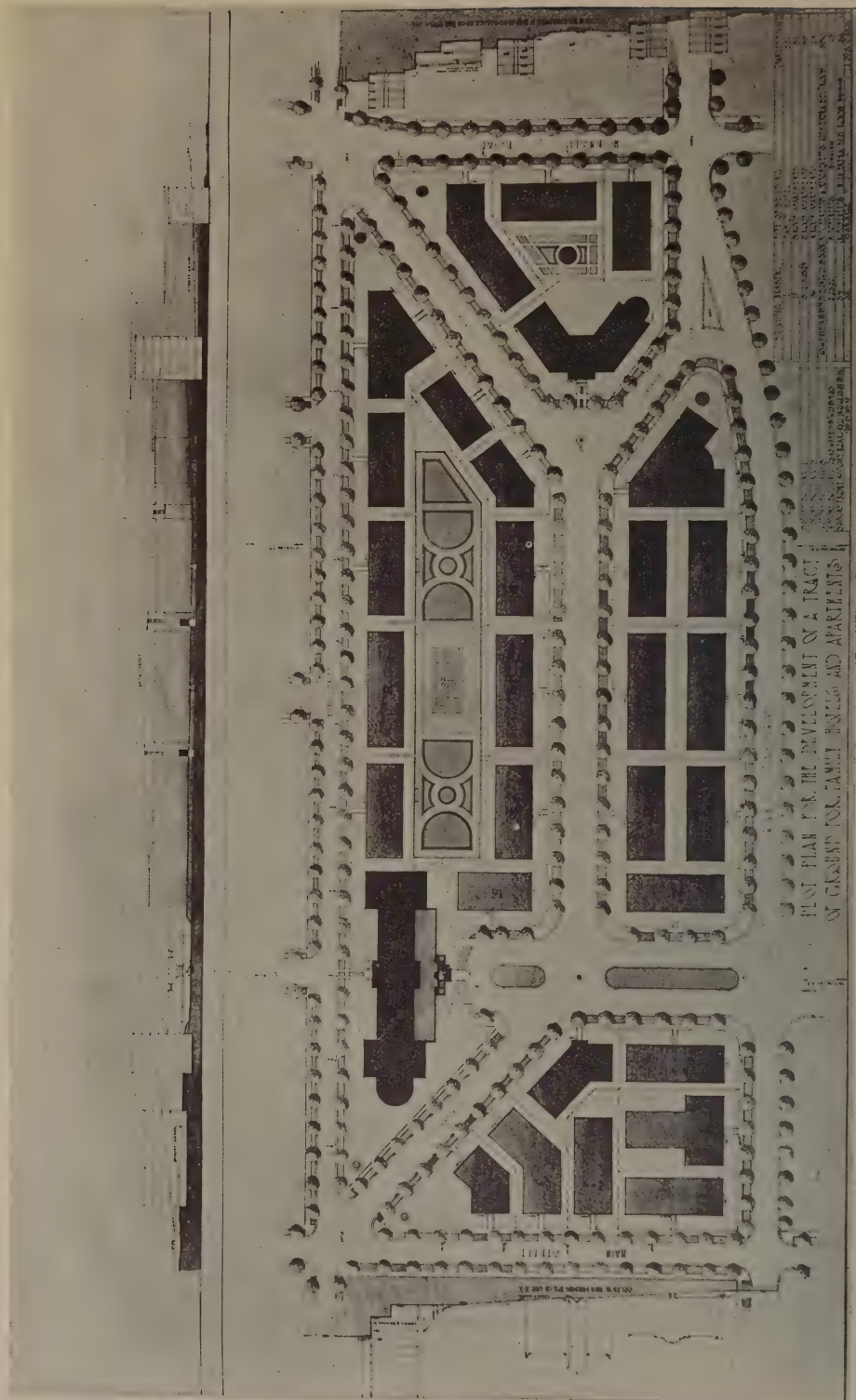
Beside the housing of these families upon the site, the program as presented to the architects also required ample storage space for automobiles belonging to the residents; circulation by means of roadways through the entire tract of land; ample light and air for all apartment buildings; and a scheme that would take advantage of the splendid views to the north, the northeast and northwest afforded by the unusually sightly location of the property. All the buildings within the district had to conform with the city building restrictions and zoning laws and no building which exceeded a height of eight stories could be erected.

In the solution of the problem consideration had also to be given to the provision of a circulation which would develop roads of easy grade and which would produce a maximum amount of front footage for building purposes without requiring so much grading on the site as to render the improvement financially impractical when viewed from the standpoint of the promoter.

The contestants in their presentation of the project were required to submit a plot plan showing the roadways and the disposition of the various building units within the tract. Floor plans of the individual buildings were not called for but each unit was designated as to the number of families it would house.

In addition to the plot plan a pen-and-ink bird's-eye perspective and various sections through the property showing the necessary grading to be encountered completed the list of drawings to be submitted by the contesting parties.

The competition was participated in by fifteen local architectural firms and awards were made by a jury composed



of an architect, a landscape architect, and the officers of the company conducting the competition. The drawings reproduced here were submitted by A. W. Hertz, N. L. Wilkinson and R. E. Crans, associated architects, and were awarded the first prize.

This solution calls for a new double roadway as the principal axis,—continued from the proposed new bridge south to the base of the main building—a large hotel situated upon the highest point of ground and forming a focal point for the entire scheme. Parking space in front of the hotel and beyond the main line of travel is provided in the layout of this roadway. A thoroughfare running east and west in the center of the tract forms a secondary axis with important buildings located at either end. At the west end this thoroughfare divides into two narrower streets which follow the natural topography and give complete circulation through the property without extreme grades. At the east end this thoroughfare bends to the southeast corner of the tract, thereby inviting traffic from Main street—the principal highway from the south part of town—through the property and northward across the proposed bridge into the heart of the business section of the district.

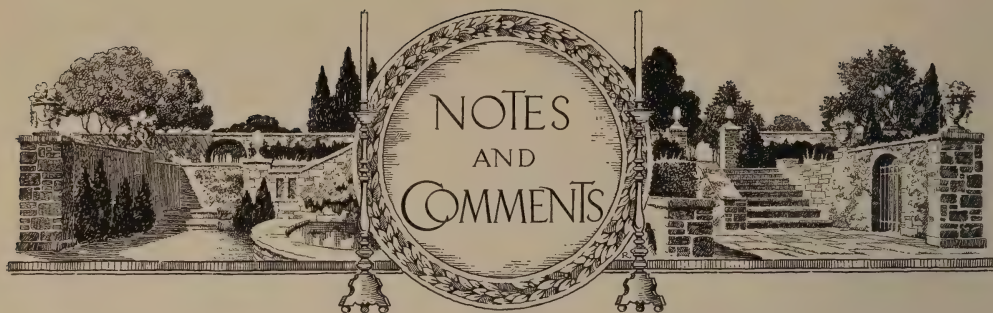
The various buildings are arranged on the site so that the shorter sides parallel the steeper grade and one tier of buildings will rise above another in successive

stages commanding a maximum amount of air and light and taking full advantage of the long distance views which are to be had from the point of the north, northeast and northwest sections of the city.

Provision is made for automobiles by the construction of a large fireproof garage in the rising ground between the two rows of apartments on the south half of the property. It is proposed in the scheme to cover this garage with a cushion of earth and provide a courtyard and playground on the roof for the use of the inhabitants of the neighborhood. Access to the garage is to be had by means of three entrances, one on the east leading out in front of the large hotel and two on the north, leading between apartments directly into the main east and west thoroughfares.

The buildings of the adjacent business district across the parkway have already been developed and the same general type of architecture has been reflected in the elevations of the buildings of this new development for the purpose of preserving harmony in color, materials and design.

The competition aimed at promoting a greater interest in better apartment house architecture and producing a scheme for a large apartment house development which might form the basis for restrictions and the proper protection of the various prospective builders who will become investors in this property.



THE SOUTHWESTERN BELL TELEPHONE COMPANY'S BUILDING ST. LOUIS

Mauran, Russell & Crowell, Architects

The building for The Southwestern Bell Telephone Company in St. Louis, now in course of construction, gives every promise of real architectural achievement along rational lines freed from the shackles of traditional "classic" influence. Here is an amazing endeavor which grasps the potential possibilities of a modern commercial problem and presents a comprehensive example of a tall building covering an entire city block, designed on the set back principle, pointing the way to a logical ideal solution of a typical American structure.

The site, bounded by Pine, Chestnut, Tenth and Eleventh streets, has an area of 52,075 square feet. The building, which has a total floor space of 965,000 square feet, reaches a grand mass of 11,967,000 cubic feet, aspiring upward in the form of a pyramid of monumental grandeur to the height of 357 feet above the street.

This brilliant mass fills us with a warm glow of satisfaction and we do not hesitate to predict for it a future wide-spreading influence of high achievement where skyscraper architecture is concerned.

The original requirement of the owner called for a building in the down town section of sufficient size to take care of his needs for the next twenty-five years. He wanted one that would provide for the Telephone Exchange with its manifold mechanisms located in the lower stories and, above that, a sufficient amount of office space to take care of the administrative forces for the entire district.

In the ordinary way such a problem resolves itself into a structure nineteen stories high, of the customary base shaft and crown treatment with the top looking as if it has been cut off with a scythe. This, of course,

would give the maximum amount of floor space for the minimum expenditure but would result in little, if any, appeal to the imagination of beholders.

The Telephone Company being a public service corporation depending upon the good will of the public and profiting thereby, it seemed to the owner advisable to construct a building that would not only serve its material needs but would give more desirable office space, impress the public with the importance of the organization, and be a source of pride to the citizens as well as to the owner. This, then was the problem presented to the architect.

How could he make it impressive? With materials, color, or form? Happy, indeed would he be if he could combine all three! And with this idea in mind he began cutting off at the sides and piling on top until he had the equivalent of the nineteen floors, in a building that was about forty stories high—decidedly impressive but too extravagant. Besides this, there was a City Ordinance which prohibited him from having a building over 250 feet high and also a Zoning Law that had been knocked out by the Supreme Court, but which still remained in the affections of the people. So the owner decided that he would get along with less than his nineteen stories of required floor space, reduce the height as much as possible and still retain the spirit of the original. Study after study was made until a form was evolved that seemed mutually satisfactory.

The next step was to find out whether or not it could be erected, because the City Building Ordinance remained in effect and it would be necessary to convince the city officials that while it was a good advertisement for the owner it was an equally good one for the city, and the owner in this case was not trying to get more than the law allowed in floor space or in cubical content but was really trying to improve upon



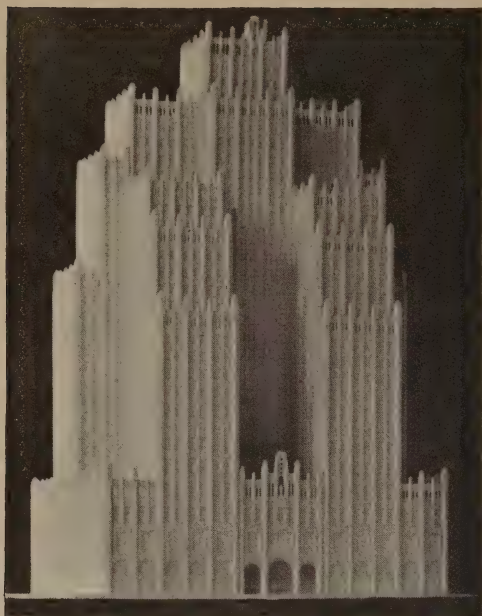
The Architectural Record

June, 1925

THE SOUTHWESTERN BELL TELEPHONE COMPANY'S BUILDING, ST. LOUIS, MO.

Mauran, Russell & Crowell, Architects

Drawing by Hugh Ferriss



MODEL OF THE SOUTHWESTERN BELL
TELEPHONE COMPANY'S BUILDING
ST. LOUIS, MO.

the conditions as laid down by the law. While the building is actually twenty-six stories high it contains the equivalent of only seventeen stories of the owner's original requirements. In addition to this the structure is cut away from the building line and in stepping back does infinitely less harm to the properties across the streets because there is less obstruction of light in a structure of this type than there would be in a straight up and down building of nineteen stories. The city officials agreed with the point of view of the owner and not only granted the permit but were so impressed with the possibilities that they decided to use the principle established in working out their contemplated new zoning law. Hence that rare condition exists where everyone is not only satisfied but pleased.

Next came the question of material, as the steel skeleton had to be clothed and all materials suitable for the purpose were considered. A number of large samples of brick were laid up and met with favor, but the design was so simple and singularly free from ornament that stone was not out of the question, and when it was found that the increased cost for this material was not insurmountable, Indiana Limestone was selected. Thus the three elements of form, material and color were achieved.

It is, of course, too early to judge of the results, but the careful study devoted to nicety of design—brought out in drawings made by Hugh Ferriss, and plaster models made by Victor Berlendis—shows an unusual structure that is perfectly logical and at the same time decidedly monumental. The building itself will be completed during the middle of the year 1926, and then can be judged by everyone. In the meantime the architects give striking evidence that they have begun it wisely and well and are courageous enough and willing to face public opinion with some degree of equanimity. Both the owner and the architects of this inspiring work are to be congratulated for a noble effort in the right direction, expressing the high romance of steel.

A. N. REBORI

THE U. S. PATENT OFFICE GAINS BY THE INFLUENCE OF A NEW ENVIRONMENT

Architects, individually, and as members of a creative and supervisory profession, have, through a span of years, debited many administrative grievances against the U. S. Patent Office. There is, therefore, subject for rejoicing on the part of the average architect in the executive order of President Coolidge which transfers the Patent Office to the jurisdiction of the Department of Commerce. Especial satisfaction arises from the circumstance that, for the time being, this clearing house of industrial property passes under the direction, sympathetic and understanding, of Mr. Herbert Hoover, who, in his capacity of Secretary of Commerce, has already proven, in his policies with respect to housing, a grasp of practical architectural problems.

It was not an inapt characterization that Secretary Hoover put upon the Patent Office as an "orphan" among Governmental institutions. In the Interior Department it had neither the stimulus of association with scientific bureaus nor that of recognized relationship to the whole cause of commercial and industrial progress. In the Department of Commerce, the Patent Office is brought into closer association with the other government bureaus—notably the Bureau of Foreign and Domestic Commerce and the National Bureau of Standards—with which its activities in some degree, interlock. More than that, it becomes a participant in a broad administrative policy which seeks development, improvement and progress in the entire sphere of material affairs.

The first recompense for the transfer of

the Patent Office—the project to simplify and quicken the whole fabric of administrative routine—is one that will cause rejoicing among architects, because architects, in both their direct and indirect contacts with the Patent Office, have suffered most from what has passed for a combination of official red tape and chronic deliberation. The architect who, conscious of the novelty of an ornamental form or outline of his inception, has desired the protection of a design patent, and the architect who sought the shelter of a process patent for, say, a distinctive method of handling monolithic concrete, have found their patience tried by the inordinate delays of examination and certification at the Patent Office.

On the other hand, how often has an architect learned, via the underground channels of professional news, of a new invention in plumbing, or roofing, or window sash mechanism, or what not, which he is impatient to specify but which is held out of his reach for what seems an interminable period because the inventor has been delayed in securing his patents. Indeed, it is no exaggeration to say that the stagnation at the Patent Office, which has many times imposed a gap of years between the completion of a valuable invention and its appearance on the commercial market, has acted as a burden and a handicap to the entire building industry of the United States. And this without separate reference to the havoc of Patent Office delays in the matter of credentialing trademarks and labels.

Blame for the conditions of the past decade and more at the U. S. Patent Office, should not be placed indiscriminately on the shoulders of administrative officers. There is extenuation in the circumstance that, until the past year or two, the Patent Office was, by neglect of Congress, hopelessly understaffed and overworked. It was in this dark age, when many of the trained and experienced examiners were alienated from their poorly paid positions to more remunerative berths in the commercial field, that the divisions of the Patent Office that most intimately serve architects, became more than a year in arrears.

When Congress tardily came to the relief of the clearing house of invention and increased the personnel to more than one thousand, at the same time authorizing salaries more commensurate with the ability of veteran specialists, the corner was turned. With the best will in the world, however, recovery has been slow.

Improvement of the physical appointments

of the Patent Office is a pledge that, by implication, attaches to the merger. For years on end, the inadequacy of the working quarters at the Patent Office has been one of the scandals of official Washington. No other branch of the government has been so inappropriately housed. All this has been the more of a reproach because the Patent Office is unique among Government institutions in that it is virtually self-sustaining, thanks to fees collected, and, by any equitable system of bookkeeping can show to its credit in the U. S. Treasury a sum sufficient to provide a home suited to its peculiar needs.

The cramped conditions at the Patent Office have had the effect of slowing down service for the architect who desires to conduct a search to ascertain the state of an art or who wishes to purchase copies of patents in force as a means of acquainting himself with the achievements of his rivals or the progress made along any given inventive path. More serious, if possible, is the other horn of the dilemma presented by the present Patent Office plant. This reveals the storage on wooden shelves in a building that is a veritable fire-trap, of records that are literally invaluable. It is trite to say that any document which cannot be replaced is priceless but when it is explained that the Patent Office archives, menaced by vermin and fire, embody all the original deeds of assignment covering patent rights which have changed hands, it may be surmised that something approaching chaos in business might indeed be precipitated should these proofs of equities be wiped out.

If Secretary Hoover, who has proven singularly persuasive of Congress, can induce the national legislature to provide a suitable habitation for the Patent Office he will, by this single act, have justified the merger. Additional to that, however, is the ambition of Secretary Hoover to render the Patent arm of our government articulate in behalf of the needs of American inventors and users of patented material. As the first move to that end he will seek to relieve the condition whereby U. S. citizens are at the mercy of all foreign powers which have "working clauses" in their patent laws, with no opportunity for retaliation by the citizens in this republic.

Instances have been multiplied in recent years in which, from every consideration of costs, quantity production, etc., the owners or fabricators of inventions of U. S. origin would have preferred to centralize production in this country, but have been deterred by limitations of foreign law. The usual

technique of a foreign power is to require manufacture of the patented invention within its territory on pain of forfeiture of patent rights. While U. S. firms have been thus compelled to establish branch factories in foreign countries, the laxity of the U. S. patent laws has not only relieved foreigners from the necessity of manufacturing here but has made it possible for a foreign patent owner to completely suppress his invention here, if it be made to his advantage to do so. Effort will be made at an international convention at the Hague in the autumn of 1925, to secure for the inventors and manufacturers of the United States more equitable status. Failing that, Secretary Hoover has indicated that he may recommend the rewriting of the patent laws of the United States to meet the situation.

Vigorous, self-centered administration of the Patent Office, with a championing and interpretative voice in the President's Cabinet and in the committee rooms of Congress, is counted upon to eradicate one evil from which architects, in company with other serious patrons of the Patent Office, have suffered. The congestion of recent years at the Patent Office has been measurably increased as a result of the systematic exploitation of amateur inventors. By means of energetic and adroit advertising campaigns, which have painted vividly the supposed rewards of invention, thousands of credulous persons have been incited to submit to the Patent Office so-called inventions lacking in merit as in patentability. The effect has been no net benefit to the cause of American invention but a further strain upon the channels of patent administration.

The occasion is well timed for modernization of the Patent Office in that an exhaustive survey of the needs of this institution has lately been undertaken, on request of the government, by a committee composed of representatives of the American Engineering Council, commercial organizations, associations of manufacturers and patent law bodies. Seeking means of simplifying procedure at the Patent Office and expediting the work, the committee has already made preliminary recommendations. Discouragement of undue multiplication of claims on the

part of inventors is one important remedy advocated by this advisory body. Architects will be especially interested, too, in the suggestion that a system of registering or recording original designs would be preferable to the present procedure of granting design patents. Finally there is the tentative promise that a more virile administration of the Patent Office will evolve some instrumentality whereby neglected and "unworked" patents may be brought to the attention of the industries that should be interested and whereby industry at large will be systematically appraised upon the expiration of each patent that, by lapse of monopoly, places a valuable or useful invention in the public domain.

WALDON FAWCETT

COLOR IN CITY PLANNING

The problem of color is of no insignificant importance in city planning, Prof. Sverre Pederson, chief architect of Trondhjem, Norway, stated in a recent address before the International City and Regional Planning Conference held in New York.

In Norway, considerable progress has been made toward controlling the painting even of private houses. This is especially true with regard to villages and smaller towns.

"It is particularly the love of white paint," said Prof. Pederson, "which creates difficulties. Small white houses lying on a rough and steep land against a dark background of fields or forests are very conspicuous and often have a discouraging effect. Their lack of color seems hard against the soft blues of the background.

"The problem of housepainting is a study which is making progress in Norway. It is the landscape which is determining this. On the coast, where the houses are on rocks and islands without any vegetation worth mentioning, the white paint may even be good. But against a somewhat darker background it does not always do well.

"A certain moderation in color seems to be favorable. Too dark colors such as dark brown, people do not like, though it holds well to many kinds of landscapes. But the intermediate tones have a rich scale of tan, grey, green and red. The window frames, the cornices and the barge boards are emphasized by another color, darker or brighter."



A NEW AND NOTABLE BOOK ON
SPANISH ARCHITECTURE

THE BYNES have lived for many years now in Madrid, and the growth of interest in Spanish architecture in this country is closely associated with their books, already considerable in number, all important and authoritative, all useful for an architect's library, and none more so than this,* which is a folio of 190 plates.

The title "Provincial Houses" was chosen instead of "Country Houses" because country life as we understand it hardly exists in Spain. "The land is still medieval and now as always vast areas have few rural houses, while crowded little towns hover under the shadow of the seigniorial castle or the cathedral." But many of the rural and small town dwelling houses are highly picturesque.

There is great variety in Spain both of climate and building material. The Basques have bitter winters on their forested hills; hence wood and half timber. Castile is a granite country. Aragon has little stone, but much clay for brick-making. The Catalan used stone and stucco, the Andalusian rubble and adobe covered with stucco. The northern house centered around its fire place, the Andalusian around its patio. In either case the climate determined the center. Whether called a peristyle, or cloister, or patio, the open court within is the immemorial characteristic of dwellings around the Mediterranean coast.

In its practical arrangements for living the Spanish house is too simple for American use without adaptation, which must needs be intelligent or even subtle,

or it will lose its peculiar distinction. But it has a style which makes small demand for expensive material or expert handicraft, and this feature gives it an advantage for use in America where materials are costly and good craftsmanship relatively scarce.

Spaniards "conversant with modern American domestic work in California and Florida have remarked that nothing quite so intensely Spanish can be found in the mother country. . . . Spanish dwellings are reserved; those in the New World expansive. . . . The Spaniard in his house is a cautious traditionalist. . . . The Andalusian cortizo has remained the same simple white-washed structure since the missionaries carried the type to America."

It was more the Andalusian type than any other which was so carried. The stucco cortizo, or collection of farm buildings, "is the prototype of the Mexican *hacienda* and the adobe ranch house of the American Southwest. . . . Nevertheless, to the rest of Spain, Andalusian architecture is exotic." Its buildings are long and low, of rubble or adobe, stuccoed and whitewashed, sometimes with colored tile roofs and bands of Pompeian red or ultramarine blue.

Where the owner's residence is included in the group, it is apt to be less austere. The patio may be paved with parti-colored pebbles in design (pl. 27). The façade is varied with door hoods, and with grills for the lower windows and balconies for the upper (pl. 25). The simplicity of the Andalusian type makes it easy to imitate, but not easy to recreate with its peculiar values. It was the art of a people who understood good proportion, who felt the special impor-

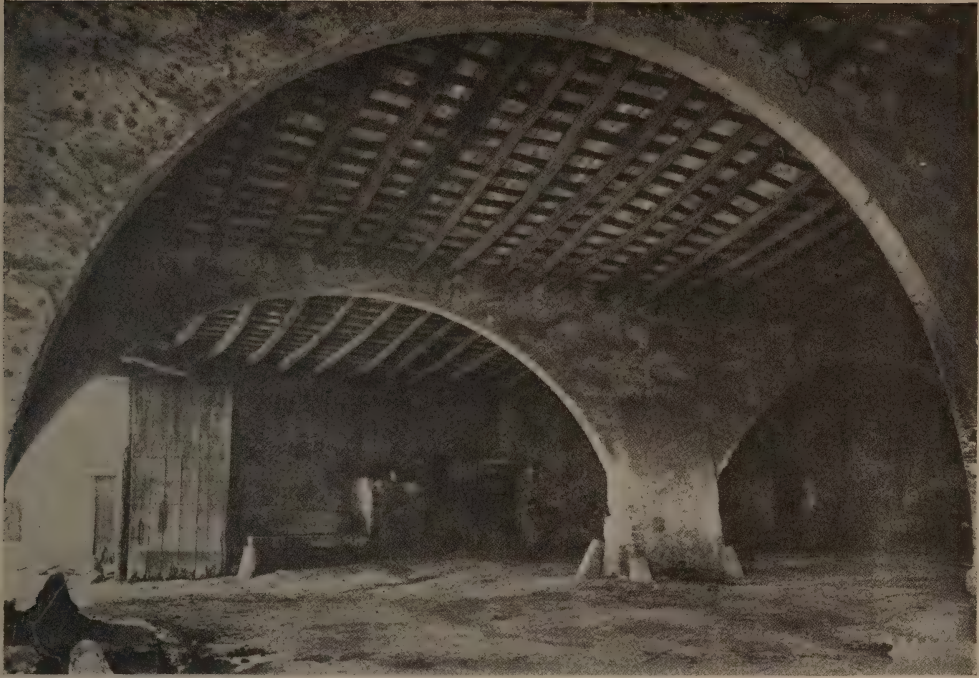
*Provincial Houses in Spain, by Arthur Byne and Mildred Stapley. New York: Wm. Helburn, Inc., 1925. \$25.00.



The Architectural Record

June, 1925

CASA DE DONA MARIA LA BRAVA, SALAMANCA
(Illustration from "Provincial Houses in Spain")



INTERIOR OF A FARM BUILDING AT FLASSA, PROVINCE OF GERONIA, CATALONIA
(Illustration from "Provincial Houses in Spain")

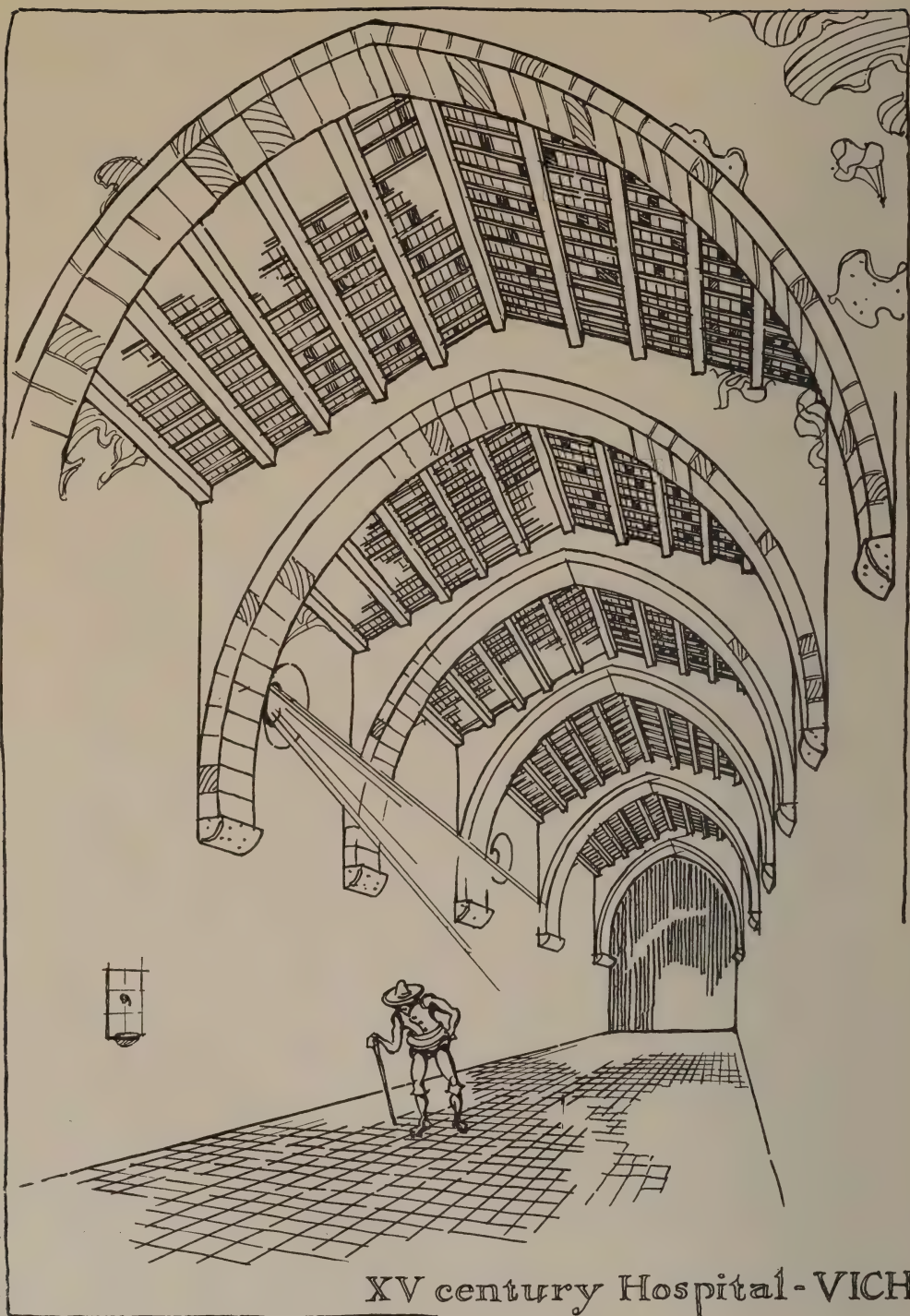
tance of the roof on their long low buildings, and how to be lavish in the right place with the intricate grill or a panel of colored tiles.

Catalonia had a wealth and a flourishing architecture when Castile was still battling with the Moors; but it fell into obscurity during the Renaissance; hence its interesting houses are Gothic. A distinct type of country house, a rural Gothic traditional with local masons, is found there. The old semi-fortified manor and farm houses often suggest a church. The patio is not a living room, as in Andalusia, but a farmyard. The lower stories are heavily vaulted. Valencia, lying south from Catalonia along the coast, is said to have more Moorish blood than any other province in Spain, but the important architecture seems to be largely Renaissance. It is the only province in which thatched cottages are found. Aragon for the most part is a bleak, arid region. Brick work prevails, with modern cornices and eaves. The

most interesting types of its country houses are in the Pyrenean foothills, and show steeply sloping roofs and great funnel-shaped chimneys. Majorcan monumental architecture is largely Renaissance of the 15th, 16th and 17th centuries. Contrary to the Castilian patio, which is wholly open to the sky, the Majorcan patios are partly built over, and have imposing open stairs on flat arches, and stair loggias. The country residence shows more Italian than Spanish influence. The Majorcan masons, like the Catalan, are skilful workmen. The house walls are stuccoed, but not white-washed, as in Andalusia. They are effectively finished in an ivory tone, with bands of dull red.

The Basque farm house is related to the mountain chalet of northern Europe. It has thick masonry and half timber walls, wooden balconies and wide, gently sloping roofs, for this northern coastal climate is relatively mild.

From whatever point you enter the



XV century Hospital - VICH

The Architectural Record

June, 1925

FIFTEENTH CENTURY HOSPITAL AT VICH, CATALONIA

(Illustration from "Provincial Houses in Spain")

[582]

Spanish peninsula, you pass almost at once into a region of hills; then a labyrinth of valleys, gorges and ravines; and finally emerge on a great central tableland, barred by the naked Sierras. This tableland is Castile, the land of castles. The Sierras cut it off from the tempering winds of the sea. The winters are long and hard, the summers short and fiery. "Nine months of winter and three of hell," is a native saying.

The Spanish character, says Havelock Ellis, "has impressed itself on Spanish architecture with more complete and overwhelming force than it has manifested in any other art, although the essential ideas of this architecture have all been borrowed." There is something hard, vigorous, virile about the Spaniard. He has a natural predilection for working in iron. His painting is full of violent effects and strong colors. His provincial architecture is as varied in style as his varied climate, and borrowed from all directions, but it is always Spanish, and the most Spanish part, as well as the main bulk of Spanish, is Castile.

Spanish building is perhaps more suggestive to American architects in its decorations and details than in its traditional structure. "Provincial Houses in Spain" is especially rich in those details. The photographic work is remarkably distinct, and there is an abundance of scale drawings.

ARTHUR W. COLTON

Concrete and Reinforced Concrete, by Walter Loring Webb, C.E., and W. Herbert Gibson, B.S., C.E. A Condensed Practical Treatise on the Problems of Concrete Construction, Including Cement Mixtures, Tests, Beam and Slab Design, Construction Work, Retaining Walls, etc. Chicago: American Technical Society, 1924. x, 240 pp., illus. 4½x7 in. Leatherette. \$2.00.

Steel Construction, by Henry Jackson Burt, C.E. A Text and Reference Book Covering the Design of Steel Framework for Buildings. Chicago: American Technical Society, 1924. viii, 372 pp., illus. 4½x7 in. Leatherette. \$2.50.

This book gives the facts and formulas needed in designing the structural steel framework for buildings.

English House Grounds. Photographic Views by Mabel Parsons; Text by Clarence Fowler; Editor, Eugene Clute. 15 East 40th Street, New York: Mabel Parsons, 1924. 99 pp. 9x11¼ in. Bound in Boards. \$7.50.

Suggestions for the grounds of small and medium-sized homes with 40 full-page illustrations from English examples; with descriptive captions and text addressed to the layman. Planned by Samuel Parsons, formerly Landscape Architect, Dept. of Parks, New York City, and completed by his daughter in collaboration with Clarence Fowler, Fellow American Society of Landscape Architects, and Eugene Clute, Editor.

Wood-Finishing, by Harry R. Jeffrey, M.A. Peoria, Illinois: The Manual Arts Press, 1924. 177 pp., illus. 5¼x8 in. Cloth. \$1.50.

The American House—Being a Collection of Illustrations and Plans of the Best Country and Suburban Houses Built in the United States During the Last Few Years—edited by Charles S. Keefe, architect. New York: U. P. C. Book Company, Inc., 1924. 24 pp. 219 plate illustrations. 9¼x12¼ in. Cloth. \$7.50.

Farm Houses, Small Chateaux and Country Churches in France, by Antonio Di Nardo. With a Preface by Paul P. Cret. Cleveland: J. H. Jansen, 1924. 176 pp. Photographs by C. D. Arnold and A. Di Nardo. 12¼x16½ in. Cloth. \$18.00.

Picturesque Scandinavia — Denmark, Sweden, Norway, Finland—Architecture, Landscape and Life of the People. With an Introduction by Valdemar Rordam, Ernst Klein, Theodor Caspari and Johannes Ohquist. New York: Brentano's 1924. xxxiv, 272 pp., illus. 9½x12½ in. Cloth. \$7.50.

Picturesque North Africa — Tripoli, Tunis, Algeria, Morocco—Architecture, Landscape and Life of the People. With Introduction by Ernst Kuhnel. New York: Brentano's, 1924. xiv, 240 pp. Photographs by Lehnert & Landrock. 9½x12½ in. Cloth. \$7.50.

The Churches of Rome, by Roger Thynne. New York: E. P. Dutton & Co., 1924. xxxii, 460 pp., illus. 4½x7 in. Cloth. \$5.00.

An interesting, chatty and well-informed tour of the Churches of the City of Rome, describing the principal tombs and works of art in each, and the historical associations, as well as the architectural beauties and peculiarities.

Manual of Office Practice for the Architectural Worker, by Frederick J. Adams, A.I.A. A Concise Tabulation of Instructions Covering the Routine of an Architectural Office for the Information of the Workers Therein and All Others Having to Do With Building Construction. New

York: Charles Scribner's Sons, 1924. x, 96 pp., illus. 5x7 $\frac{3}{4}$. Cloth. \$1.25.

This book is the result of many years of active practice in the office of McKim, Mead & White. It provides a formulated system for production through a series of skeletonized instructions, arranged in approximate sequence, to cover each step from inception to completion. The methods are the successful survivals of many which have been tested by actual application on work of all kinds, under all sorts of conditions. It should prove of the greatest usefulness in the offices of architects everywhere.

Heat Transmission of Insulating Materials: Report of The Insulation Committee. New York: The American Society of Refrigerating Engineers, 1924. Annual Meeting, 1922, Revised. 114 pp., illus. 8 $\frac{1}{2}$ x11 in. Paper. \$2.00.

A general valuation of the book may be gathered from the following excerpt from Section I, the introduction to the Committee's report: "Whether any single individual or any set of individuals will ever give either the complete or last word on heat transmission in installation is, of course, subject to conjecture. But this report is a step in the right direction; the equivalent of the combined information contained in the several sections of this report cannot now be found anywhere between the covers of any single publication, nor in such ready-to-use form. This report should, therefore, prove of decided value to the profession."

John Francis Bentley, by W. W. Scott-Moncrieff. New York: Charles Scribner's Sons, 1924. Masters of Architecture Series. 28 pp., 35 illustrations from photographs by F. R. Yerbury. 7 $\frac{1}{2}$ x10 in. Bound in Boards. \$2.50.

Etchers: And Etching, Chapters in the History of the Art Together with Technical Explanations of Modern Artistic Methods, by Joseph Pennell, N.A. New York: The MacMillan Co., 1924. 2 ed. xxix, 344 pp., illus. 9x12 $\frac{1}{4}$ in. Cloth, \$12.50.

The volume is two-fold in character. The first part is devoted to trenchant and independent criticism of some of the great masters in the world of etching, and the second to a discussion of the technique of the art of etching itself. Both the critical and technical parts of the book are copiously and beautifully illustrated. There are twelve Whistlers, nine Rembrandts, and nine Pennells among the more than fifty etchings reproduced by half-tone and photogravure.

London, by Sidney Dark, with illustrations by Joseph Pennell. New York: MacMillan & Co., Ltd., 1924. xii, 176 pp., illus. 6 $\frac{1}{4}$ x10 $\frac{1}{4}$ in. Cloth. \$7.50.

There are many interesting books on London, but this is the one London book illustrated by Joseph Pennell. The drawings were made in 1908, but have not been reproduced before.

American Colonial Architecture — Its Origin and Development—by Joseph Jackson. Philadelphia: David McKay Co., 1924. viii, 228 pp., illus. 5 $\frac{1}{4}$ x8 in. Cloth. \$2.00.

American Landscape Architecture, edited by P. H. Elwood, Jr., A.S.L.A. New York: The Architectural Book Publishing Co., Inc., 1924. xx, 194 pp., illus. 10 $\frac{1}{2}$ x13 $\frac{3}{4}$ in. Cloth. \$20.00.

[The following may be secured by architects on request direct from the firms that issue them, free of charge unless otherwise noted:]

Flooring Oak. "Superior Brand 'America's Finest' Oak Flooring." Superior Oak Flooring Company, Helena, Arkansas. 8 $\frac{1}{2}$ x11 in. 24 pp. Illustrated.

Plants. "Better Plants—by Farr." Third Edition, 1925. Bertrand H. Farr, Wyomissing Nurseries Company, Wyomissing, Pennsylvania. 6 $\frac{3}{4}$ x9 $\frac{1}{8}$ in. 48 pp. Illustrated.

Lighting Fixtures, Exterior. Union Metal Exterior Lighting Fixtures, Entrance Standards, Brackets and Newels. Book No. 54. The Union Metal Manufacturing Company, Canton, Ohio. 8 $\frac{3}{8}$ x10 $\frac{1}{2}$ in. 44 pp. Illustrated.

Organs. "A Periodical Presentation of Pipe Organ Progress." Skinner Organ Company, 677 Fifth Avenue, New York City. 8 $\frac{1}{2}$ x11 in. 24 pp. Illustrated.

Fans and Blowers. American "Sirocco" Fans and Blowers. Bulletin No. 1801. American Blower Company, Detroit, Michigan. 8 $\frac{1}{2}$ x11 in. 72 pp. Illustrated.

Furniture, Built-in. "Architects' Hand Book Peerless Built-in Furniture." Built-in Fixture Company, 2608 San Pablo Avenue, Berkeley, California. 9x11 $\frac{1}{4}$ in. 22 page Looseleaf Folder. Illustrated.

Chimney Pots. "Chimney Pots of Atlantic Terra Cotta." Atlantic Terra Cotta Company, 350 Madison Avenue, New York City. 8 $\frac{1}{2}$ x11 in. 12 pp. Illustrated in Colors.

Linoleum. "Pattern Book 1925." Armstrong's Linoleum—Felt Base Floor Coverings and Felt Base Rugs. Armstrong Cork Company, Linoleum Division, Lancaster, Pennsylvania. 3 $\frac{1}{4}$ x5 $\frac{7}{8}$ in. 216 pp. Illustrated in Colors.

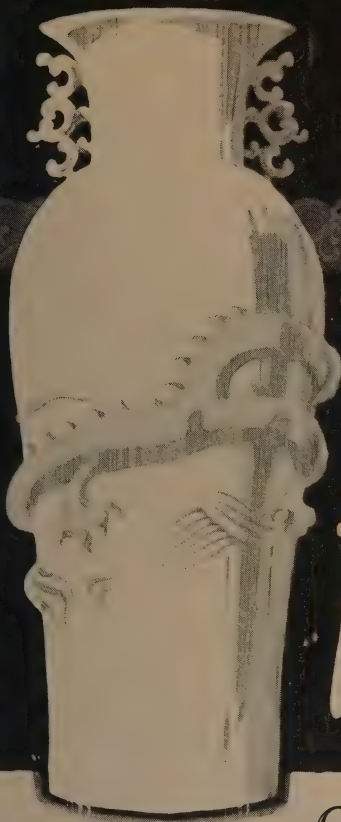
Wall Finishes. Lucas Lu-Co-Flat—A Flat Interior Wall Finish. John Lucas & Company, Inc., Fourth and Race Streets, Philadelphia, Pennsylvania. 3 $\frac{3}{8}$ x8 $\frac{3}{8}$ in. 8 pp. Illustrated in Actual Colors.

Boilers. "Kewanee Firebox Boilers in Omaha Schools." Kewanee Boiler Company, Kewanee, Illinois. 6x9 in. 16 pp. Illustrated.

Consoles. "The New Luminous Stop Console." Estey Organ Company, Brattleboro, Vermont. 6x9 in. 16 pp. Illustrated.

Racks, Steel—"The Maforco Line of All Steel Racks. Market Forge Company, Everett, Massachusetts. 8 $\frac{1}{2}$ x11 $\frac{1}{4}$ in. 40 pp. Illustrated.

Hardware—"Sliding and Folding Partition Door Hardware." Catalog No. 40. Richards-Wilcox Manufacturing Company, Aurora, Illinois. 8 $\frac{1}{2}$ x11 in. 32 pp. Illustrated.



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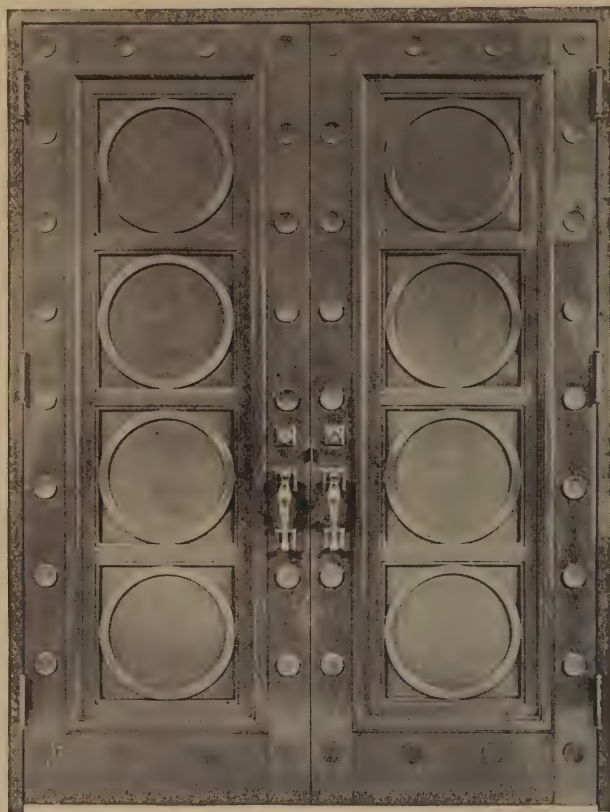
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